

Transport for NSW

Active Transport Systemic Analysis Findings and Recommendations

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Executive Summary

Context

Walking and cycling arguably form the keystone modes within the Future Transport 2056 strategy, as they are crucial in delivering benefits across placemaking, economic activity, social equity, accessibility and sustainability outcomes. Perhaps uniquely in a NSW transport context, however, the councils of the 128 Local Government Areas (LGAs) in NSW play the primary role in planning and delivering walking and cycling interventions across the state.

The genesis for this review lay in the stakeholder engagement activities undertaken by the team developing the Walking SBC. During a series of council workshops a range of issues were highlighted that appeared systemic in their nature. This piece of work was subsequently commissioned by TfNSW to identify, validate and provide potential resolutions to any systemic issues that may inhibit the realisation of the Future Transport vision. This document will form an appendix to the Walking and Placemaking Strategic Business Case (Walking SBC), currently in development.

A comprehensive list of stakeholders was developed in conjunction with the Active Transport team at TfNSW leading the development of the Walking SBC. Over 50 interviews were conducted primarily as one-to-one sessions using videoconferencing platforms.

Findings

A range of issues were identified through the stakeholder consultation process. At a high level, the issues grouped together into three overarching themes:

- Theme 1: The main beneficiaries of walking and cycling are not the asset owners
- Theme 2: The limiting factor on system throughput is the availability of funding to deliver infrastructure that meets user needs
- Theme 3: Legislation, policies, standards, guidelines and supporting systems are not yet aligned, limiting the ability to make, and the pace of cultural change necessary to change outcomes

The report constructs a conceptual system model that attempts to explain the relationships, behaviours and outcomes currently observed in relation to walking and cycling initiatives. Nineteen issues that are inhibiting current system throughput and outcomes are identified and discussed. These are summarised below:

Systemic theme	#	Issue	Evidence
1: Primary beneficiaries not the asset owner	1	Footpath funding	• The State only indirectly funds footpaths through the 'Active Transport' program, yet is a major beneficiary in multiple areas • The legislative environment places all the responsibilities on local councils, including footpaths adjacent to State Roads.
2: Limitations on system throughput	2	Council resourcing	• Few councils have dedicated walking and cycling resources, reflective of the cultural and structural importance. • Some councils admitted that perceptions of political bias in funding decisions either led to not applying for funding, or making multiple funding applications split apart by electorate.

Systemic theme	#	Issue	Evidence
	3	Infrastructure backlog	Many of the infrastructure gaps that exist today can be, to varying degrees, attributed to legacy long-term planning guidance that has allowed suburbs to be built without adequate walking and cycling infrastructure.
	4	Organisation and Governance	- Evidence that shared path infrastructure deters vulnerable user groups from walking, but that councils implement such assets as a one-size-fits-all 'active transport' solution due to capacity (lack of skilled walking and cycling resources to identify user needs) and funding (responding to what the State will fund) constraints. - Walking infrastructure is public space. It has to provide multiple uses, supporting utility connections, traffic signs, driveway / building access, bus shelters, cycle parking. The multiple purposes mean many stakeholders are involved; this shared ownership and lack of a single 'owning' agency makes governance difficult.
	5	System-wide funding	- Annual value of infrastructure delivered for walking and cycling combined is in the millions of dollars. - Annual value of infrastructure delivered for other modes is in the billions of dollars.
	6	Grant process management	- Only successful funding applicants to the Active Transport (Walking and Cycling) Program are formally notified of outcomes. - Councils identified impacts including budgeting issues for projects with proposed shared funding arrangements, and delivery delays as a result of procurement, design and community consultation requirements all needing to be met post-funding decision.
	7	Self sustainability unattainable	- Councils are the owners of walking and cycling assets adjacent to road corridors, yet have insufficient resources to deliver on the State's Future Transport Vision for walking and cycling. - Council rates are subject to maximum increases determined by IPART, which cover a range of services, including footpath maintenance.
	8	Modal hierarchy	Walking and cycling are not considered as core scope for all transport projects; examples were provided of projects where walking and cycling infrastructure was de-scoped from transport projects as a result of value management.
	9	Increasing O&M burden	- Councils are the owners of walking and cycling paths. - The amount of infrastructure under management by Councils is increasing with growth in number of new developments. - In the 2017/18 financial year alone, the total Council maintenance backlog across NSW grew by \$80 million.
	10	Secondary impacts	- Demand for dedicated exercise and recreation facilities increases where there is limited access to safe alternatives. - The COVID pandemic has demonstrated how many people use publicly accessible walking and cycling infrastructure when alternative facilities are unavailable.
	11	Social equity impacts	- The level of focus on providing walking and cycling infrastructure varies greatly across councils. - Walking and cycling for recreation are important in regional and rural areas where there are lower levels of public transport service provision - Walking and cycling to access local centres and transport facilities are more important in suburban and urban areas. - Walking improvements benefit all as virtually all trips include a walking component.
		3: Alignment of legislation, policies, guidelines and processes	

Systemic theme	#	Issue	Evidence
	12	Warrants process	- Demonstrating that a proposed pedestrian facility is warranted requires evidence that existing pedestrian and motor vehicle demand meets minimum levels across two (reduced warrants) or three periods in a day, preventing adequate infrastructure from being established ahead of developments opening that will increase walking levels. - Measuring foot traffic is a labour intensive exercise whereas low-cost methods exist to measure vehicle volumes.
	13	Council decision rights	- Road authority delegations limit the decision-making powers of local councils. - Achievement of council walking and cycling outcomes is heavily dependent on the personalities in decision making roles - Guidance documents attempt to codify technical considerations with limited success.
	14	Signal timings for walkers and cyclists	- Technical guidance for modelling traffic signals in microsimulation modelling (replicating SCATS) recommends 'minimum green time of 6 seconds for pedestrians' in a nominal cycle time of 140 seconds (unless RMS requests otherwise), resulting in minimum green time allocation to walkers as a default position. - More clarity around the governance of signal timing may also be beneficial. - This may cause issues for people with limited mobility, resulting in equity issues.
	15	Planning legislation	- Councils determine at a local level the amount and types of walking and cycling infrastructure that they support, with no NSW-wide requirements for minimum provisions in different settings. - Many neighbourhoods built during the 1960s, 1970s and 1980s had limited dedicated walking infrastructure due to the relatively low levels of car conflicts. - Residential subdivisions and changes in land use densities in urban suburbs have resulted in car growth to the point where roads are not suitable any longer as shared spaces.
	16	The system reflects the prevailing culture	- The State government doesn't directly fund footpath assets (other than to improve safety). - The focus for Transport (RMS) has been on limiting road-based congestion. - The establishment of TfNSW led to a net decrease in walking- and cycling-focused resources at the State level as "duplicate functions" were removed from the transport cluster.
	17	Strategic and tactical alignment	- Transport (Legacy RMS) Technical Direction documentation is not currently aligned to the Movement and Place (M&P) approach — the strategic approach to transport and land use planning adopted in NSW. - Austroads Road Design guidelines and NSW-specific supplements are not currently aligned to the M&P approach.
	18	Rules and (dis)incentives	- Feedback from council traffic engineers indicates that their decision-making is heavily influenced by the guidelines and standards. - Feedback from Austroads about legal guidance received relating to the status of Guideline documentation as being representative of best practice.
	19	Outcome bias impacts	- The existing warrants process is resulting in perverse outcomes, with pedestrians having to be prepared to cross roads in potentially unsafe locations to warrant the right to safe crossing facilities. - Community feedback received by councils suggests that local communities want more pedestrian friendly environments.



Recommendations

While the focus of this work was on identifying systemic issues that impact active transport, fifteen high-level recommendations that could help address these issues have been identified. These recommendations are framed as outcomes; further implementation planning to identify owners and select specific approaches to deliver these outcomes will be required.

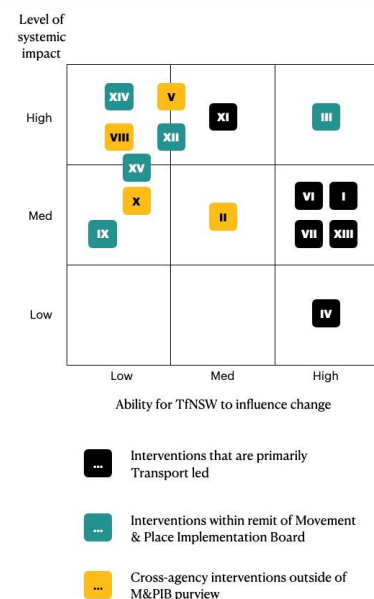
These high-level recommended interventions are summarised below.

#	Interventions
I	Treat Walking and Cycling as separate modes with senior advocates for each mode in the organisation
II	Give Councils greater ownership of decision-making for local roads - especially about providing pedestrian facilities and speed management measures
III	Identify all legacy artefacts that embed the 'Predict and Provide' approach to road corridor planning and develop guidance that facilitates the 'Vision and Validate' approach that can be applied by traffic engineers and planners
IV	Provide formal feedback to councils about unsuccessful funding outcomes
V	Develop an approach for the State/TfNSW to fund footpath infrastructure beyond safety improvements.
VI	Establish a team to review speed zoning and traffic signal phasing and timings for all road users on a centre by centre basis
VII	Develop metrics that accurately reflect walking and cycling participation
VIII	Increase funding for walking and cycling infrastructure through reprioritisation/reallocation of funding from other modes if necessary
IX	Legislate minimum levels of walking and cycling infrastructure for future development that applies to all council areas
X	Provide funding support for asset maintenance
XI	Provide multi-year funding support to Councils
XII	Invert the traditional road user hierarchy

#	Interventions
XIII	Incorporate demand from other corridor users in the traffic signalling system (currently SCATS)
XIV	Set outcome-based targets for walking participation for those responsible for enabling and delivering
XV	Identify opportunities to improve cross-agency governance to champion walking and cycling

Three categories of intervention are defined, those which are within the domain of TfNSW to drive implementation, those which fall within the purview of the Movement and Place Implementation Board, chaired by DPIE, and other, cross-agency interventions.

	Intervention	Agencies involved
I	Treat Walking and Cycling as separate modes with senior advocates for each mode in the organisation	Transport
II	Give Councils greater ownership of decision-making for local roads - especially with regard to providing pedestrian facilities and speed management measures	Transport, Councils
III	Identify all legacy artefacts that embed the 'Predict and Provide' approach to road corridor planning and develop guidance that facilitates the 'Vision and Validate' approach that can be applied by traffic engineers and planners	Transport, Councils
IV	Provide formal feedback to councils about unsuccessful funding outcomes	Transport
V	Develop an approach to fund footpath infrastructure	Transport, Treasury, DPIE, Health, Education
VI	Establish a team to review speed zoning and traffic signal phasing and timings for all road users on a centre by centre basis	Transport, Councils
VII	Develop metrics that accurately reflect walking and cycling participation	Transport
VIII	Increase funding for walking and cycling infrastructure through reprioritisation/reallocation of funding from other modes if necessary	Transport, DPIE, Treasury
IX	Legislate minimum levels of walking and cycling infrastructure for future development that applies to all council areas	Transport, DPIE
X	Provide funding support for asset maintenance	Transport, Treasury, DPIE, Health, Education
XI	Provide multi-year funding support to Councils	Transport
XII	Invert the traditional user hierarchy	Transport, DPIE, Councils
XIII	Incorporate demand from other corridor users in the traffic signalling system (currently SCATS)	Transport
XIV	Set outcome-based targets for walking participation for those responsible for enabling and delivering	Transport, DPIE, Health, Education?
XV	Identify opportunities to improve cross-agency governance to champion walking and cycling outcomes.	Transport, DPIE, Health, Education?



Introduction

Transport for NSW (TfNSW) developed its Future Transport 2056 strategy in 2016 to provide “the vision for the next 40 years of transport in NSW”¹. The strategy defines six key outcomes for the future of mobility in NSW, being:

1. Customer focused - where every customer experience will be seamless, interactive and personalised by technology and big data;
2. Successful places - where liveability, amenity and economic success of communities and places are enhanced by transport;
3. A strong economy - where the transport system powers NSW's future \$1.3 trillion economy and enables economic activity across the state;
4. Safety and performance - where every customer enjoys safe travel across a high performing, efficient network;
5. Accessible services - where transport enables everyone to get the most out of life, wherever they live and whatever their age, ability or personal circumstances; and
6. Sustainable - where the transport system is economically and environmentally sustainable, affordable for customers and supports emissions reductions.

TfNSW is now well into the delivery of a range of initiatives designed to meet these outcomes, which have impacts on all modes of travel, including active transport. The term ‘active transport’ is commonly used to refer to the self-powered modes of transport—walking and cycling. 2019 saw the development of a Strategic Business Case (SBC) for Cycling and Micro-mobility, crafting the case for the creation of a Principal Bicycle Network within NSW. 2020 now sees the planning focus turn to walking, with the development of an SBC for walking.

Walking and Cycling arguably form the keystone modes within the Future Transport 2056 strategy, as they are crucial in delivering benefits across placemaking, economic activity, social equity, accessibility and sustainability outcomes. Perhaps uniquely in a NSW transport context, however, the Councils of the 128 Local Government Areas (LGAs) in NSW play the primary role in planning and delivering walking and cycling interventions across the state.

This piece of work has been commissioned by TfNSW to identify and provide potential resolutions to any systemic issues that may inhibit the realisation of the Future Transport vision. This document will form an appendix to the Walking SBC document.

The document is structured in the following way:

- Chapter 1: Methodology
- Chapter 2: Roles and responsibilities
- Chapter 3: Walking and Cycling system overview
- Chapter 4: Issues analysis
- Chapter 5: Recommendations
- Chapter 6: Next Steps

¹ future.transport.nsw.gov.au

Chapter 1: Methodology

First, an important note about context. This review was completed during a period that represented anything but business as usual, taking place during the height of the 2020 COVID lockdown period.

The review was conducted in the following way:

- identification of initial areas for investigation
- consultation with a wide range of stakeholders representing a variety of roles performed across the active transport system
- issues mapping and theming
- development of a conceptual system understanding
- examination of how issues contribute to system behaviour
- development of recommendations for changing system outcomes

The genesis for the review lay in the stakeholder engagement activities undertaken by the team developing the Walking SBC. During a series of council workshops a range of issues were highlighted that appeared to be systemic in their nature.

A comprehensive list of stakeholders was developed in conjunction with the Active Transport team at TfNSW leading the development of the Walking SBC. Interviews were conducted primarily as one-to-one sessions using videoconferencing platforms. The interview sessions were used for a range of purposes, including to understand the overall system structure and dynamics, along with an understanding of where outcomes within the system are currently being inhibited.

Regular engagement was undertaken during the project with the Walking SBC Working Group.

An issues map was developed during the interview process to capture issues raised and support theming. This was used to inform the development of the conceptual system architecture, informing the understanding of the system dynamics. With a solid understanding of the conceptual system dynamics established, a review of the issues was undertaken to understand those with the greatest influence on system performance.

Chapter 2: Roles and responsibilities

This section provides an overview of roles and responsibilities of the various actors in the active transport system. The following sections describe the public entities acting at local, state and national level, along with the private entities.

Local entities

There are 128 councils in NSW responsible for delivering the system of local government in NSW in accordance with the functions and responsibilities detailed in the Local Government Act 1993.

Local councils have ownership of the majority of roads in NSW under the terms of the Roads Act 1993². Roads are classified according to three categories; State, Regional and Local.

- **State Roads:** Under the Roads Act 1993, councils are the owners and roads authority for State Roads other than Freeways, however, the Act allows the NSW Government to exercise roads authority functions to the extent necessary for the functioning of a road as a State Road. Councils retain responsibility for the road reserve of State Roads, including service roads, footpaths and control of noxious weeds except in situations where the RTA [sic] has specified to, or agreed with, council that the RTA [sic] would be responsible for specific other assets, works or activities within the road reserve.³
- **Regional Roads:** Regional roads are the responsibility of councils to fund, determine priorities and carry out works. They are capitalised as a council asset.^{4,5}
- **Local Roads:** Local roads are the responsibility of councils to fund, determine priorities and carry out works.⁶

In general, councils are responsible for the ownership, planning, operations and maintenance of walking and cycling infrastructure. There are some exceptions, including where the infrastructure is provided on Crown Land.

State-based entities

A number of State entities have an interest in 'active transport'. These include:

- TfNSW
- NSW Department of Planning, Industry and Environment (DPIE)
- The Greater Sydney Commission
- NSW Department of Health
- NSW Office of Sport
- NSW Department of Education

The following sections provide an overview of the interests of each party.

² Source: <https://www.legislation.nsw.gov.au/#/view/act/1993/33/whole/part10/div1/sec145> — Roads authorities own public roads

³ Source: <https://www.rms.nsw.gov.au/business-industry/partners-suppliers/lgr/documents/road-management-arrangements.pdf> — NSW road management arrangements

⁴ Source: *ibid.*

⁵ Note: The outcomes of the Regional Road Transfer and NSW Road Classification Review will see the transfer of up to 15,000 kms of regional roads to the State. <https://www.rms.nsw.gov.au/business-industry/partners-suppliers/lgr/arrangements-councils/road-classification-review.html>

⁶ Source: *ibid.*

TfNSW

TfNSW is “responsible for strategy, planning, policy, regulation, funding allocation and other non-service delivery functions for all modes of transport in NSW including road, rail, ferry, light rail, point to point, regional air, cycling and walking”⁷.

There is currently an organisational redesign process underway (Evolving Transport) which is integrating the legacy functions of Roads and Maritime Services (RMS) into the broader TfNSW organisation.

Prior to the commencement of the integration process, TfNSW was responsible for the strategy, planning and policy functions in relation to active transport, while RMS was responsible for the operations and delivery functions. As the overarching Roads Authority for NSW public roads, RMS had a legacy role in administering the Roads Act 1993 obligations on behalf of the Minister for Roads.

TfNSW has responsibility for a range of areas that directly influence the demand for walking and cycling. These include the setting of policies for Walking and Cycling, the administration of grant funding to assist councils in delivering walking and cycling infrastructure, and decisions around the provision and placement of public transport infrastructure and services.

There are a range of legislative instruments that relate to walking and cycling. These include:

- NSW Road Rules 2014, which detail the legally enforceable obligations of road users (including drivers, riders, passengers and pedestrians)
- Roads Act 1999 No 33 which:
 - sets out the rights of members of the public to pass along public roads;
 - sets out the rights of persons who own land adjoining a public road to have access to the public road;
 - establishes the procedures for the opening and closing of a public road;
 - provides for the classification of roads;
 - provides for the declaration of RMS (TfNSW) and other public authorities as roads authorities for both classified and unclassified roads;
 - confers certain functions (in particular, the function of carrying out road work) on RMS (TfNSW) and on other roads authorities;
 - provides for the distribution of the functions conferred by the Act between RMS (TfNSW) and other roads authorities; and
 - regulates the carrying out of various activities on public roads.
- Road Transport Act 2013, which contains a range of traffic-related offences, including what constitutes unsafe driving behaviour such as drink driving, drug driving, negligent driving, reckless driving and menacing driving.

From an operational perspective, TfNSW has a role in planning, operating and maintaining walking infrastructure such as pedestrian crossings (on State Roads), traffic signals (on all roads) and speed zoning treatments.

NSW Department of Planning, Industry and Environment (DPIE)

DPIE is responsible for a number of functions of the NSW Government, including long-term planning, infrastructure priorities, natural resources, the environment, energy and growing

⁷ Source: <https://www.transport.nsw.gov.au/about-us/our-mandate>

the State's industries. DPIE undertakes a range of activities across a number of relevant areas for walking and cycling, including developing future population, employment and housing projections, land use planning and zoning, managing compliance, developing policy and legislation, and administering the NSW planning system.

The NSW Environmental Planning and Assessment Act 1979⁸ provides the legislative framework for local infrastructure contributions. Also known as developer contributions, the EPA Act allows councils to charge for contributions for local infrastructure when new development occurs. They are used to provide infrastructure to support development, including open space, parks, community facilities, local roads, footpaths, stormwater drainage and traffic management. There are two forms of developer contributions under the EPA Act, Section 7.11 contributions⁹ and Section 7.12 levies¹⁰:

- Section 7.11 contributions are charged where there is a demonstrated link between the development and the infrastructure to be funded. Councils prepare contributions plans which specify what infrastructure will be provided and approximately how much it will cost. This is used to calculate a contribution rate, usually charged per dwelling or per square metre. Councils that want to charge a contribution rate above the threshold set by the Minister for Planning and Public Spaces¹¹ must submit their plans to IPART for independent review.
- Section 7.12 levies are an alternative to section 7.11 contributions, charged as a percentage of the cost of development. The maximum percentage that can be charged in most areas is 1%, although there are a small number of areas that charge a higher percentage.

The Greater Sydney Commission (GSC)

The GSC was established by an Act of Parliament with specific roles and responsibilities for planning for Greater Sydney. The Commission has a number of priorities that include leading community and stakeholder engagement, dialogue and debate and advising government on a range of key city-making issues, including liveability and quality outcomes, connected and healthy communities, and mitigating heat island effects — all of which are key considerations for walking and cycling.¹²

The GSC also maintains the Greater Sydney Dashboard — providing a single point of access to government data that reports on a range of Performance Indicators (defined in The Pulse of Greater Sydney), which specifically include 'Walkable places' and 'Addressing urban heat' as two of the four key measures.

NSW Ministry of Health

The NSW Ministry of Health is responsible for health policy in NSW. A core area of focus for the health system is the prevention of conditions which result in long-term dependence on medical resources. There is extensive evidence that being active has positive physical and mental health benefits, reducing the risk of many health problems including heart disease, type 2 diabetes, anxiety, depression, unhealthy weight gain, and even some cancers.¹³

⁸ Note: See Division 7.1 Development Contributions — <https://www.legislation.nsw.gov.au/#/view/act/1979/203/part7/div7.1>

⁹ Note: Section 7.11 contributions used to be called "section 94" and are still referred to by some in this way

¹⁰ Note: Previously called section 94A

¹¹ Note: Defined in the Environmental Planning and Assessment (Local Infrastructure Contributions) Direction 2012 — <https://www.planning.nsw.gov.au/-/media/Files/DPE/Directions/ep-and-a-local-infrastructure-contributions-direction-2012-s7-17-consolidated-2020-02-14.pdf?la=en>

¹² Source: <https://www.greater.sydney/who-we-are>

¹³ Source: <https://www.makehealthynormal.nsw.gov.au/Pages/active-and-healthy-for-me.aspx>

In addition to being the lead policy agency promoting healthy living, the Ministry of Health provides resources to support behaviour change initiatives encouraging greater levels of walking and cycling among all age groups.

NSW Office of Sport

The NSW Office of Sport is the lead NSW Government agency for sport and active recreation. The Office of Sport aims to increase the levels of physical activity of the people of NSW by providing the leadership, policies, programs, funding and infrastructure necessary to enable higher rates of participation in sport and active recreation. In this context, active recreation is defined as physical activity for the purposes of relaxation, health and wellbeing or enjoyment which can be self-directed or facilitated by a provider or organisation.¹⁴

One of the stated goals of the Office of Sport is that “Everyone in NSW can access places and spaces for sport and active recreation”.

Up until the COVID-19 curtailment of organised community sport in NSW, the Office of Sport ran the Walking for Pleasure Program, which has now transitioned across to join the larger Heart Foundation Walking network¹⁵.

NSW Department of Education

The NSW Department of Education has an indirect influence as decisions around the location of new school facilities impact on resulting levels of walking and cycling. Schools located in areas with low quality walking and cycling infrastructure are heavily dependent upon support from local councils to provide upgraded footpaths, cycle facilities and road crossings to deliver an environment that is attractive for active transport modes.

National entities

The following national entities have a role in the active transport system:

- Austroads
- Standards Australia
- Australian Human Rights Commission

Austroads

Austroads is the collective of Australian and New Zealand transport agencies, representing all levels of government. Funded by the member agencies, Austroads work impacts a wide range of agencies including planning, service, infrastructure, health and safety, public health and policing.

Austroads publishes a range of guides which cover the design, construction, maintenance and operation of the road network in Australia and New Zealand. The Guides have been adopted by all road agencies across Australasia, and document agreed methods and processes, and provide information about new technologies and procedures related to the road and road transport industry.

¹⁴ Source: <https://sport.nsw.gov.au/aboutus/what-we-do>

¹⁵ Note: Initially established as the ‘Just Walk It’ program in Queensland over 20 years ago, the Heart Foundation Walking program is now a national program which has helped more than 120,000 Australians start and stay walking. Source: <https://walking.heartfoundation.org.au/about-us>

The Guides have a large influence on the design and development of walking and cycling infrastructure.

Standards Australia

Standards Australia is an organisation that develops standards “that set out specifications, procedures and guidelines that aim to ensure products, services, and systems are safe, consistent and reliable”¹⁶. Whilst being voluntary documents in a standalone setting, standards are often referred to within State and Commonwealth legislation which can make them a mandatory requirement.

In a walking and cycling context, Australian Standard 1742 — Manual of uniform traffic control devices Parts 9 (Bicycle facilities) and 10 (Pedestrian control and protection) provides detailed guidance to asset designers as to the requirements for the design of a range of different aspects of pedestrian and cycling facilities, while the broader suite of documents apply to the use of different devices that can be used to clearly guide and warn drivers, cyclists and pedestrians about road, traffic and path conditions.

In addition, the Commonwealth Disability Discrimination Act 1992 (DDA) gives effect to a number of Disability Standards. These include the Disability Standards for Accessible Public Transport 2002 (DSAPT), which apply to the obligations of transport providers in providing equity of access to public transport services and reference a range of Australian Standards developed and maintained by Standards Australia.

Under the DDA, “a footpath would come under the definition of ‘premises’ and would therefore be covered by section 23 of the DDA”¹⁷. Under Section 23 of the DDA “It is unlawful for a person to discriminate against a person on the ground of the other person’s disability”¹⁸.

In their advice relating to footpaths, the Australian Human Rights Commission considers what it would take to assist people in not discriminating, and draws on AS1428 parts 1 & 2 (Design for Access and Mobility). For example, AS1428.2 shows that the minimum width required for two people using wheelchairs to pass each other is 1800mm, which is often wider than the standard facility width provided by local councils (often 1500mm or less).

Australian Human Rights Commission (AHRC)

Around one in five Australians has a disability. The DDA makes disability discrimination unlawful and promotes equal rights, equal opportunity and equal access for people with disabilities. The AHRC, through the Disability Discrimination Commissioner, works with governments, the private sector and civil society to help individuals and organisations understand their rights and meet their legal responsibilities. People who experience discrimination can complain to the commission.¹⁹

The AHRC identifies a range of potential barriers to access that might give rise to a complaint to be made under the DDA. These include:

- A business operating on the footpath in a way that causes a barrier to access.
- The placement of street furniture, poles, bollards or equipment in locations that cause a barrier to access.

¹⁶ Source: <https://www.standards.org.au/standards-development/what-is-standard>

¹⁷ Source: <https://humanrights.gov.au/our-work/disability-rights/frequently-asked-questions-access-premises#footpath>

¹⁸ Source: Commonwealth of Australia Disability Discrimination Act 1992 — <https://www.legislation.gov.au/Details/C2018C00125>

¹⁹ Source: <https://humanrights.gov.au/our-work/disability-rights/about-disability-rights>

- A business that allows overhanging trees to encroach on the footpath.
- A tree root that causes an uneven surface.
- A kerb ramp that does not allow for safe passage
- A developer who is using the footpath to undertake renovation or building work.

In one case cited on the AHRC website, “a man who uses a wheelchair complained that footpaths in his area were difficult and dangerous to negotiate because of bumps, tree roots and café tables and chairs. The matter was settled when the council advised that it has adopted a footpath trading policy requiring clear lines of passage for people with mobility or vision impairments, and had prioritised capital works for footpath repairs”²⁰.

Private entities

Private entities play a critical funding and delivery role within the active transport system, as a result of the Section 7.11 contributions, Section 7.12 levies, Voluntary Planning Agreements and Special Infrastructure Contributions outlined above.

²⁰ Source: <https://humanrights.gov.au/our-work/disability-rights/frequently-asked-questions-access-premises#footpath>

Chapter 3: Walking and Cycling system overview

This section presents a conceptual active transport system model, formulated based on the understanding built up through stakeholder interviews and desktop research. The chapter commences with a brief introduction to systems thinking, before stepping through the current walking and cycling system component by component.

Overview of systems thinking

System dynamics was invented as a discipline in the 1970s by Jay Forrester at MIT in the USA. Since that time, the principles of systems thinking have been used to explain disparate phenomena in the physical environment as well as the broader business world.

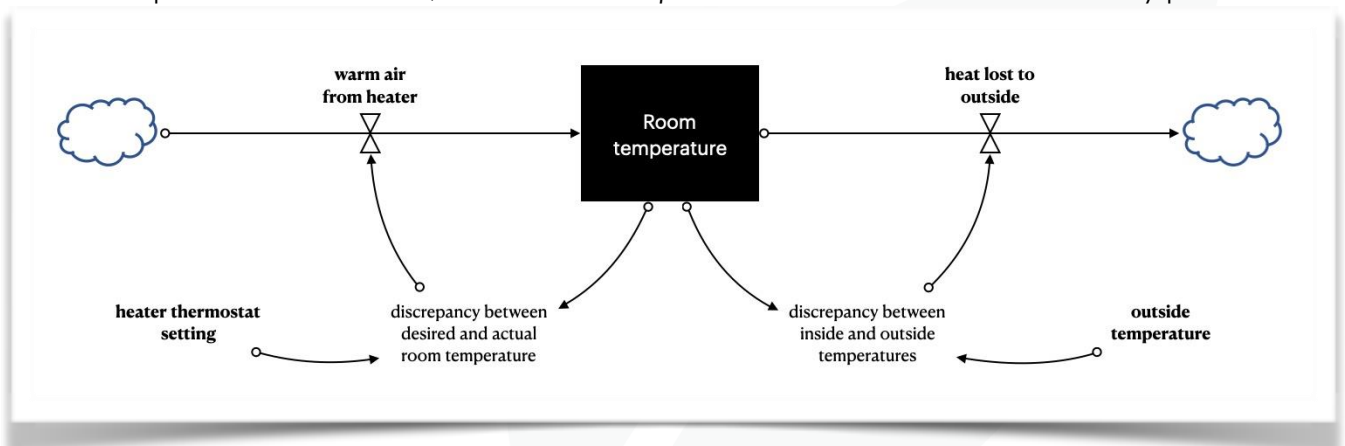
At its essence, the concept of systems thinking differs to a linear, process based view of the world where information and work flows in a series of logical, sequential steps. In dynamic systems, the behaviour within the system responds to positive and negative feedback that, in turn, change the future behaviour of the system in often unexpected ways.

An example of a simple system — warming a house in winter

The following figure²¹ shows a simple system that most people can relate to — trying to keep a room warm in winter. There are a few elements that systems diagrams show, these are:

- Clouds, which indicate the conceptual bounds of the system
- Rectangles, depicting stocks that are elements of the system that can be seen, felt, counted or measured at any point in time
- Arrows, which show the flow through the system
- Double-triangles, showing rates, which restrict or enable flows between stocks
- Other text, showing the factors that influence flow rates

In the conceptual model above, the 'Room temperature' can be measured at any point



in time. The temperature is adjusted by two key factors — warmed air from the heater being sent into the room to raise the temperature (*warm air from heater*), and the cooling effect as a result of conductive heat loss as the warm air escapes to the outside (*heat lost to outside*). The system is dynamic in nature, as the rate of change of room temperature is driven by two critical factors — the desired temperature of the room (*heater thermostat*

²¹ Source: Thinking in Systems, Donella H. Meadows, p.36

setting), and the difference in internal temperature versus the external ambient temperature (*outside temperature*).

On the heating side, the rate of warming of the room is determined by the size of the '*discrepancy between the desired temperature and the actual temperature as measured by the thermostat*'. When the room is at the desired temperature the heater stops heating. On the cooling side, the rate at which the room loses heat is driven by the size of the '*discrepancy between inside and outside temperatures*' — on a day with no cloud cover, as the sun sets the temperature outside tends to drop at a faster rate than on a cloudy day. The greater the discrepancy between inside and outside temperatures, the faster the rate of conductive heat loss. The greater the rate of heat loss, the greater the requirement for warm air to maintain the desired temperature, and the harder the heater has to work.

The potential actions one can take to intervene in the above system depend upon the motivation behind its examination. To understand why the heater is constantly on during a cold night, this model helps to show that the colder the outside temperature relative to the desired temperature inside, then the greater amount of heating will be required to maintain the desired temperature. To understand how one can save money on their heating bill, then the above model provides three areas to look at, with the most acceptable solution ultimately depending on an individual's motivations:

- With the above system, the simplest way to reduce bills is to focus on the amount of time that the heater is providing heat. This can be most simply done by accepting a lower room temperature — setting the thermostat to a lower level. If this is not an acceptable solution, say the temperature is already set at the lowest level of comfort, then the system points to two other areas — the rates of inputs and outputs.
- On the input side, there are options available to change the rate at which the heater heats to become more efficient, including:
 - changing the heater for a more cost-effective option, requiring an initial investment, or
 - changing the size of the space being heated by moving to a different, smaller room, for example.
- Similar options exist on the output side. The rate of cooling is influenced by the ability for warm air to easily escape. Options here include:
 - checking that all the doors and windows are shut, and there are no gaps.
 - looking at insulation — could it be improved to reduce the rate of heat loss? This again may involve an investment, which raises the question as to which of the investment options would be the most cost-effective relative to the potential benefit.

Context is all important in systems analysis. Taking a systematic approach to understanding how one might reduce their heating bill by examining the system alone as presented may miss the most effective measure that could be taken — through changing the problem space itself and thinking about the problem differently. In this case, the most effective intervention might be to think of the problem not as one of room temperature, but instead person temperature. Putting on additional layers of clothing may offset the need to turn the heating on in the first place.

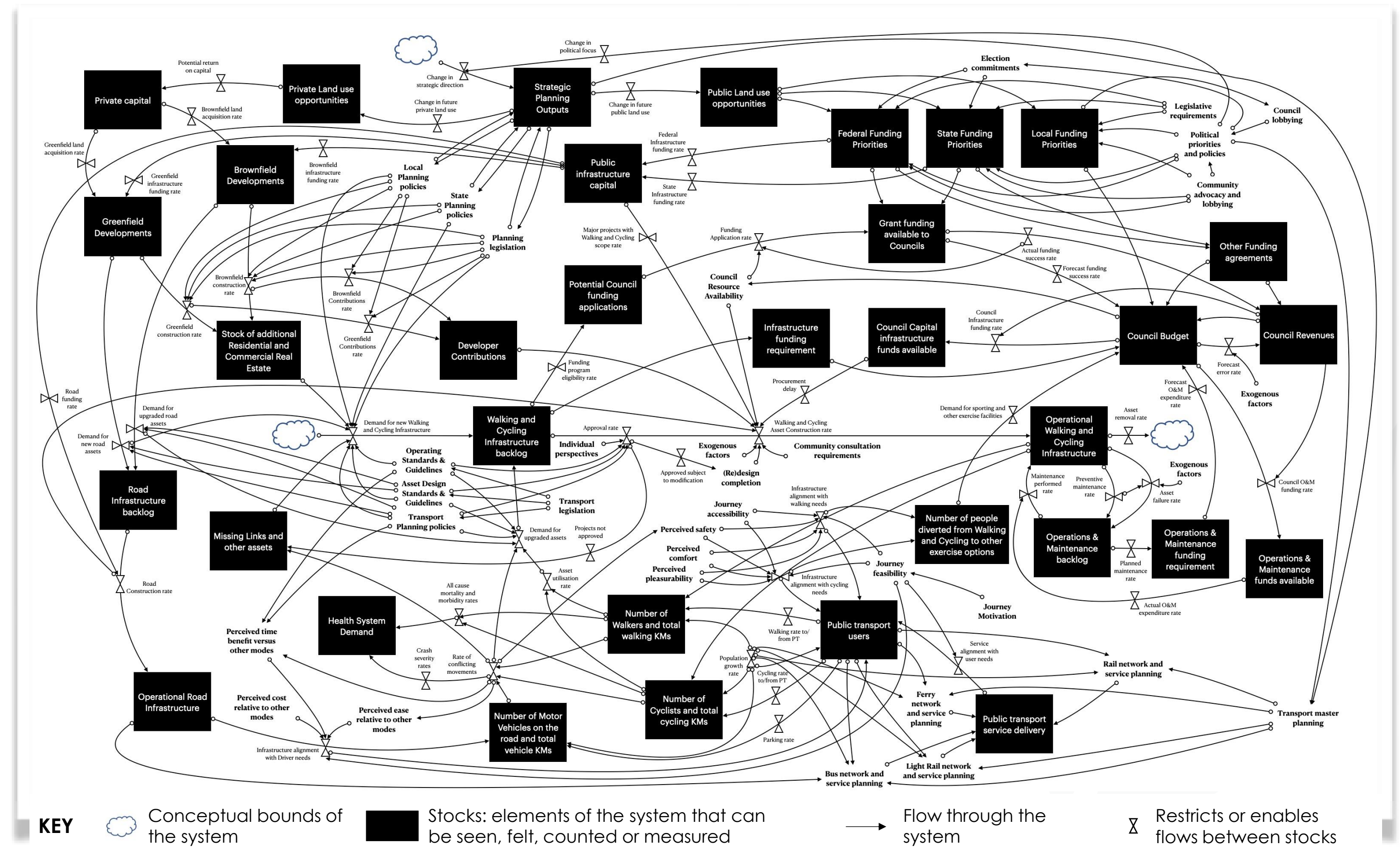
The example given above is intentionally simple, but demonstrates that there are multiple ways one can intervene once they understand the dynamics of the system and what their ultimate motivation, or goal is.

The active transport system

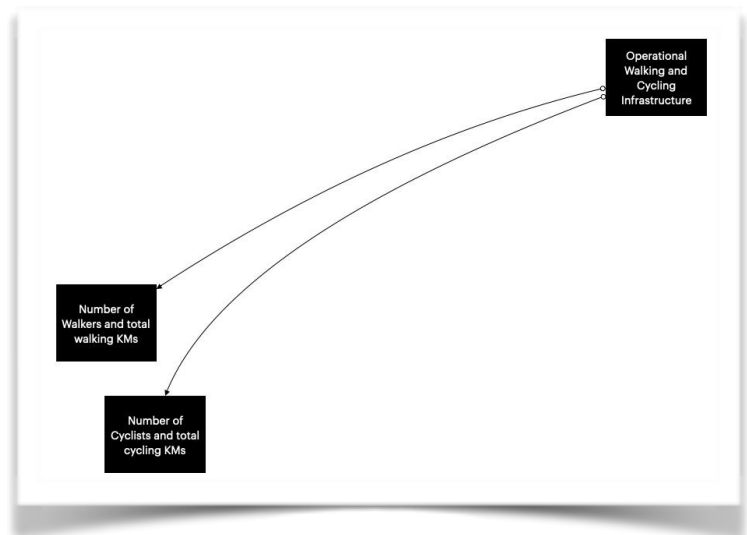
A conceptual system model has been developed to represent the current active transport system based on a combination of desktop research and interview inputs. The purpose of the system model is to assist with understanding how the issues raised through the interviews are driving systemic outcomes and behaviours. With an understanding of the system dynamics, it better enables interventions to be designed that address issues raised whilst minimising the potential for unintended consequences. The conceptual model is shown below.



The model explained - demand side factors

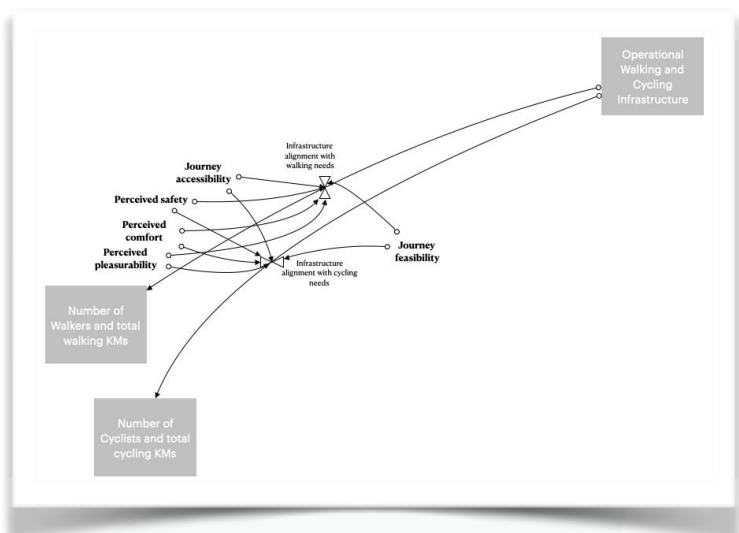


1. The simple hypothesis underpinning the model is that there is a positive relationship between the availability of walking and cycling infrastructure and the number of people who walk and cycle



2. The extent to which people use available walking and cycling assets is influenced by the degree to which the infrastructure provided meets underlying user needs. In the model, the Hierarchy of Walking Needs framework²² has been used as the decision model for walkers and cyclists, when judging the degree of infrastructure alignment with their walking and cycling needs. The decision framework looks at five factors:

1. Journey feasibility: Is the journey feasible to be made by walking or cycling?
2. Journey accessibility: Is there somewhere to walk or cycle, and something to walk or cycle on?
3. Perceived safety: Does the journey feel safe, with respect to crime?
4. Perceived comfort: Does the journey feel comfortable, with respect to traffic safety²³?
5. Perceived 'pleasurability': Is the journey likely to be interesting and/or pleasurable?



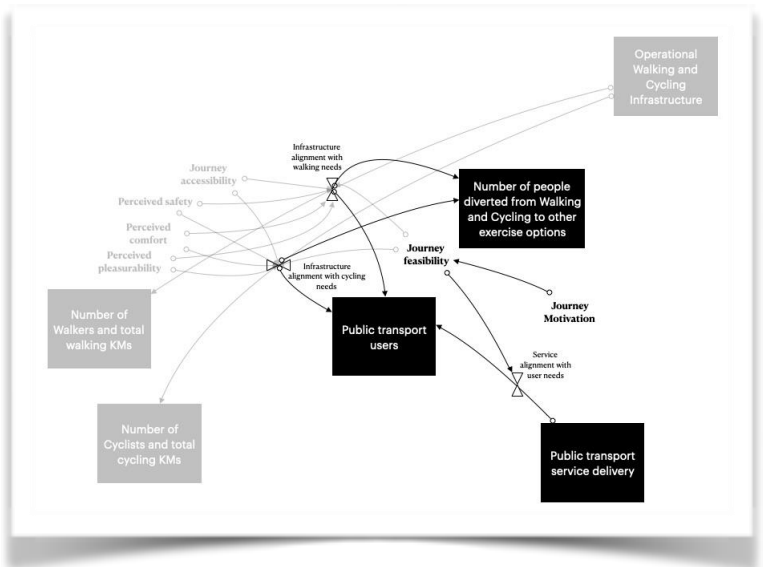
3. The degree to which a journey will be considered by an individual to be feasible will be influenced by the underlying journey motivation:
 - 'Active transport' is so named due to the fact that undertaking the activity is, in and of itself a form of exercise. If the motivation for the journey to be made is to engage in exercise, then inadequate infrastructure is likely to result in individuals either opting to undertake an alternative form of exercise (substitution), or to go somewhere where there is appropriate infrastructure to meet their needs — for example, travelling to a park, off-road cycle facility. During the COVID-19 lockdown when

²² Source: Alfonso M A, <https://doi.org/10.1177%2F0013916504274016>, with an overview presented at <http://www.stateofplace.co/our-blog/2017/3/to-walk-or-not-to-walk>

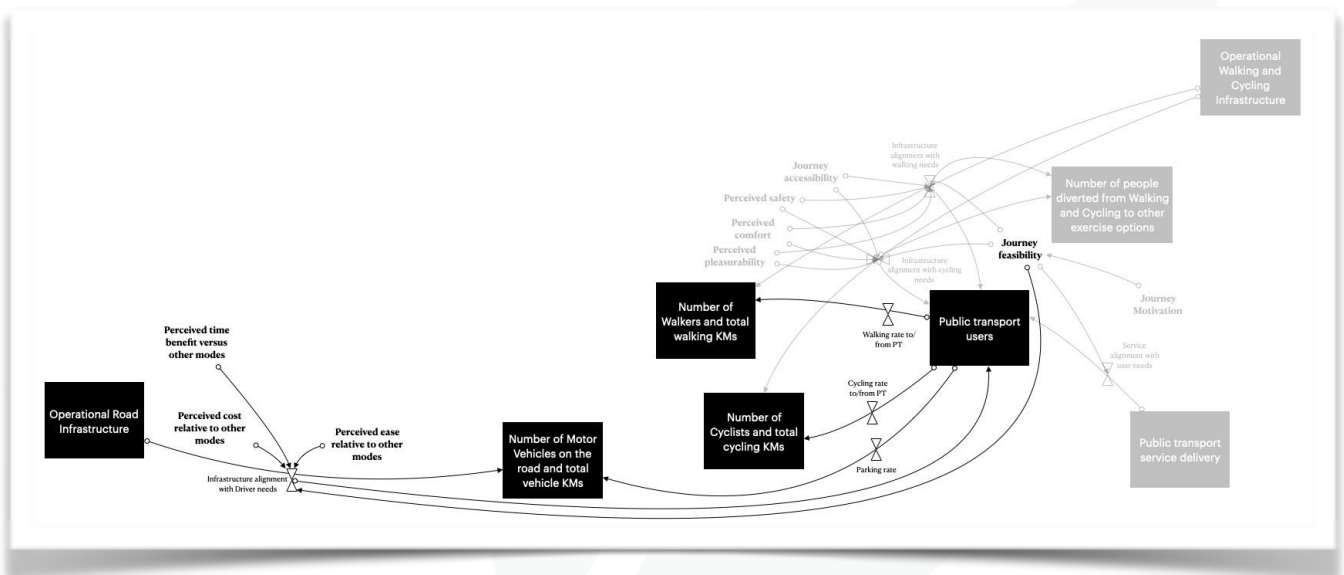
²³ Note: It is unclear why the author classifies traffic safety in this category, however the framework was developed in the USA where many cities have greater levels of assaults and other crimes against individuals than is the case in the Australian context. It should be noted that Road Safety is a key priority of the NSW Government.

access to alternative options was limited, there was a marked increase in the number of people walking and cycling in their local communities to meet their exercise needs.

- If the motivation for the journey is for a purpose other than exercise — for example, as a method of access to or from public transport — then journey feasibility is also influenced by the availability of a suitable public transport option, which is a function of contracted routes and service levels, managed by TfNSW. Here again, walking and cycling journey decisions are influenced by the transport network. On routes where express services operate, there is evidence to suggest that people will walk or cycle past their closest public transport stop in favour of stops with greater journey frequency and consequently, less time waiting for services to arrive.



4. Of course, walking, cycling and public transport are not the only transport alternatives available. The main competing mode, for short trips in particular, is the private vehicle. In the same way that the number of walking and cycling journeys is positively correlated with the availability of infrastructure, the same can be inferred for motor vehicles. Part of the journey feasibility decision, for those with access to a vehicle (either privately owned, or a taxi/ride-share), is the alternative infrastructure that exists for a car to replace either some or all of the alternative journey.



This is influenced by:

- The road network (Operational Road Infrastructure) that provides connectivity
- The perceived cost of car travel versus other modes. Research has demonstrated that under the largely sunk-cost model of car ownership, drivers perceive individual

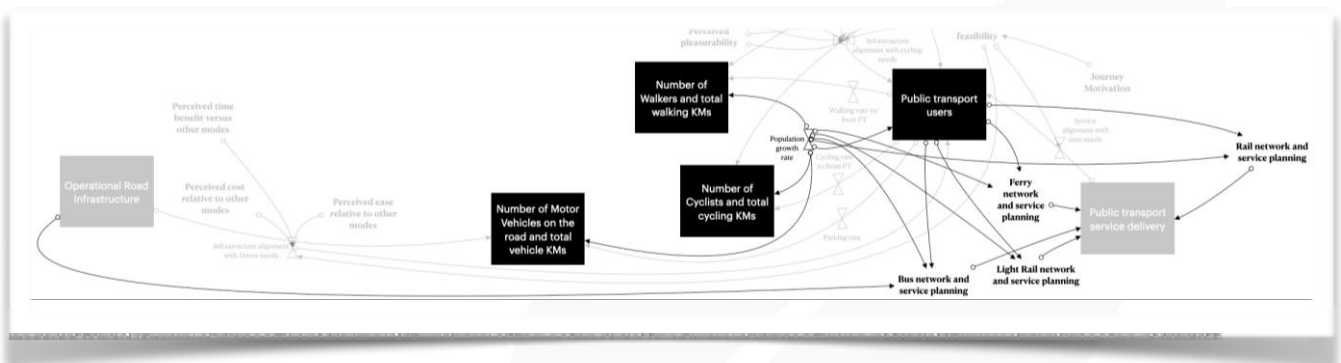
journeys to cost close to zero, unless there are explicit marginal costs incurred such as road tolls or parking costs.

- The perceived time benefit versus other modes. A large journey time differential is a barrier to public transport use in particular; and
- The perceived ease of making the journey via car instead of other modes. For example, journeys with multiple interchanges on public transport, or travelling through heavily congested areas in a car when public transport priority lanes exist influence perceptions of relative ease — and therefore journey choice. For some journeys, such as shopping, the relative ease of car use is also extremely high, due to the flexibility it provides for making a large number of purchases, or the purchase of bulky items without the need to worry about how they will be transported home.

Due to the different access options for public transport, the number of people walking and cycling will also be influenced heavily by the public transport access mode choice, captured in the model through the walking rate to/from PT, Cycling rate to/from PT and the parking rate (of public transport users). This is a function of how the walking and cycling infrastructure available to support access and egress compares to the alternative options (for example, driving to a bus stop or train station to commence the journey, and proximity of the destination stop/station to the ultimate destination).

5. Over time, the demand for different modes and facilities will change as the underlying population changes. Even under an assumption where the relativity between modes remains equal (i.e. no change in the relative modal shares between walking, cycling, public transport (PT), and motor vehicles), if the population growth rate is positive, there will be higher levels of demand across all modes.

Population growth trends influence modal network and service planning for public transport where services are delivered by contracted service providers. Public transport service utilisation levels (*Public transport users*) also directly influence *network and service planning* decisions in the short to medium term as the State has the ability to vary service levels within existing contracts.



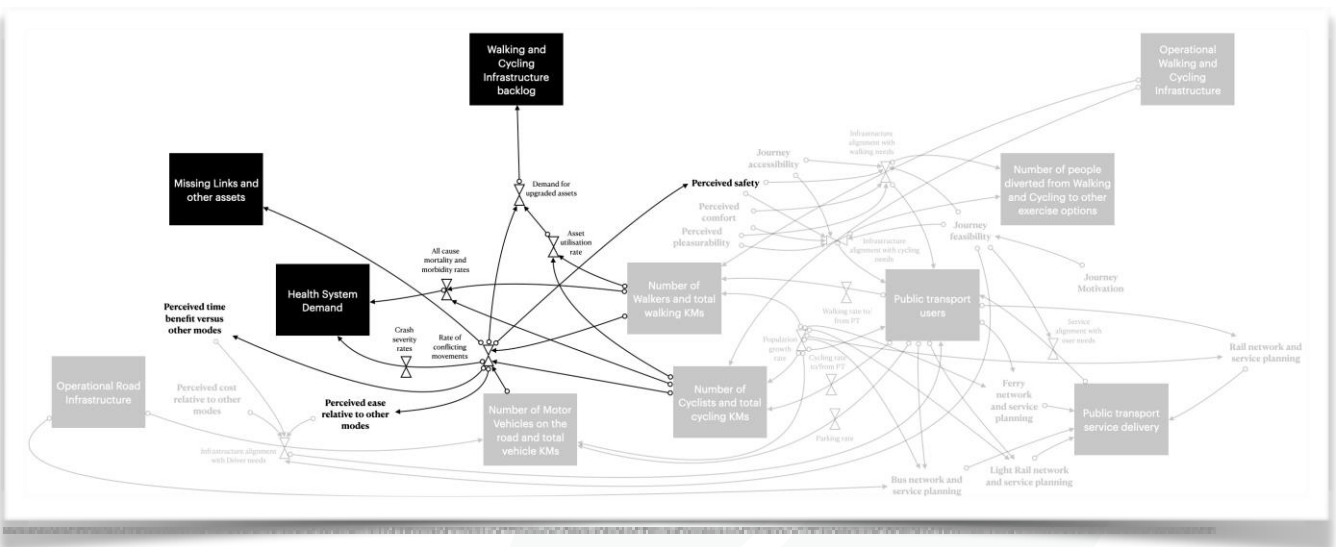
6. As the amount of walking and cycling increases, three key effects are observed. The first is an increase in the asset utilisation rate of walking and cycling assets, which results in demand for upgraded assets. The level of unmet demand for new assets can be measured in terms of the Walking and Cycling Infrastructure backlog.

Secondly, as the number of walkers, cyclists and vehicles on the road increase, so does the amount of demand on the different functions of the road corridor. Conflicting movements include the demand for public transport services to make regular stops for passenger access and egress, car demand for throughput (*road corridor capacity*) and parking supply, demand from walkers for safe and convenient crossing facilities

along primary desire lines and demand from cyclists for appropriate facilities. Over time, as interventions are made that rebalance road corridor allocation away from a focus on vehicle throughput, the relative efficiency (*Perceived time benefit versus other modes*) and ease of private vehicle use (*Perceived ease relative to other modes*) are impacted.

As the rate of conflicting movement increases, so does the demand for upgraded assets to meet the needs of different users (e.g. wider footpaths, upgraded crossing facilities), along with the probability of crashes involving the different user groups, with walkers and cyclists among the most exposed and vulnerable users in the road corridor (*Crash severity rates*). Inevitably, many crashes involving vulnerable users result in additional *Health System Demand*. Additionally, increasing levels of conflicting movements between road corridor users result in the identification of gaps in the walking and cycling networks (*Missing Links and other assets*).

The third effect resulting from increased numbers of people walking and cycling is a positive impact in terms of lowering *Health System Demand*. Research has shown that people who are active have a significantly lower risk of experiencing a range of adverse physical and mental health outcomes (*All cause mortality and morbidity rates*). As more people walk and cycle, physical activity rates increase and health outcomes improve — reducing health system demand. From an economic perspective, this effect exceeds the negative effects of higher crash numbers. NSW Ministry of Health estimates that overweight and obesity cost NSW \$19bn in 2008²⁴; the economic cost of pedestrian crashes is estimated at around \$5.2bn per annum²⁵. This is reflected in the addition, the World Health Organisation notes that “At all ages, the benefits of being physically active outweigh potential harm, for example through accidents.”²⁶



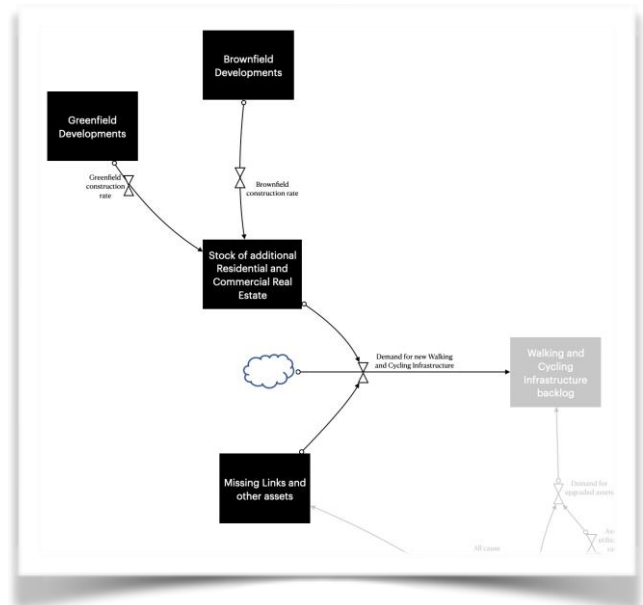
²⁴ NSW Health, Adult Overweight and Obesity Snapshot, June 2017.
<https://www.health.nsw.gov.au/health/Publications/snapshot-adult-obesity-17.pdf>

²⁵ Transport for NSW Centre for Road Safety, Value of fatal and serious pedestrian crashes across NSW. Data shows \$26.2bn cost over 5 years.

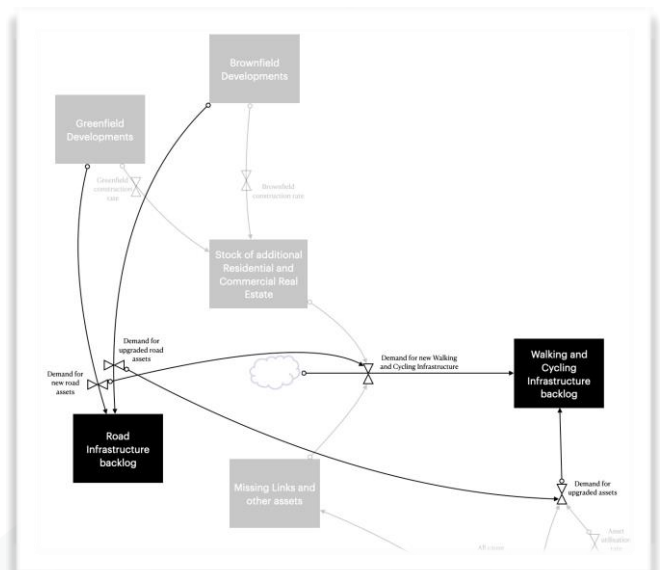
²⁶ See World Health Organisation Physical Activity Factsheet: <https://www.who.int/news-room/factsheets/detail/physical-activity>

7. The walking and cycling infrastructure backlog reflects not only the demand for upgraded assets, but also the demand for new assets. New asset demand arises from a number of sources, including:

- Specific measures to address missing links and other assets associated with resolving issues for existing users and responding to changing cultural and social trends such as the desire for more environmentally friendly transport options
- Residential and commercial developments in greenfield areas that create demand for new walking and cycling infrastructure (*Greenfield Developments*)
- Residential and commercial developments in brownfield areas (infill and redevelopment) that change the dynamics of demand in existing areas (*Brownfield Developments* in areas without existing walking and cycling infrastructure)

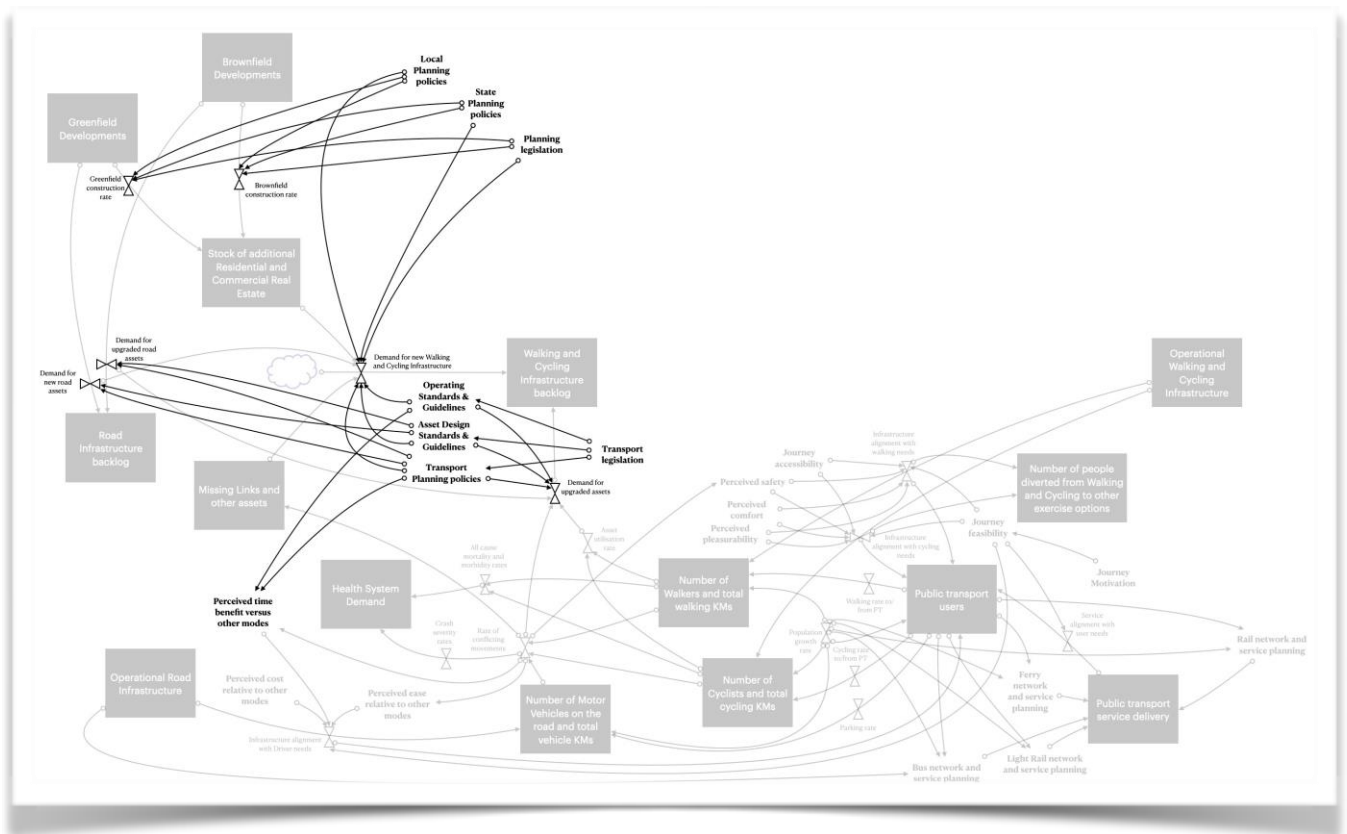


8. The rate of demand for new walking and cycling infrastructure is influenced by a range of factors, aside from the identification of latent demand and new demand. From a road corridor perspective, greenfield (*Demand for new road assets*) and brownfield developments (*Demand for upgraded road assets*) create demands for investments in road infrastructure assets — represented in the model through the *Road Infrastructure backlog*. Demand for new and upgraded walking and cycling infrastructure is generated in tandem with the demand for new road assets and demand for upgraded road assets, reflective of the type and density of development.



9. The final component of the demand side of the model is the impact of a range of legislation, planning policies, transport planning policies, operating standards and

guidelines and asset design standards and guidelines on the demand for walking and cycling infrastructure.



- **Transport legislation:** As discussed in Chapter 2, the roles of the State and Local Government with respect to walking and cycling are defined in a range of legislative instruments, including the NSW Road Rules, Roads Act, and Road Transport Act. Transport legislation defines the roles and responsibilities of the various parties involved in managing, operating and using the transport system, including defining the rules and offences applicable to different parties. Legislation informs the approach taken to transport planning, asset design and operating standards and guidelines.
- **Planning legislation:** State planning legislation details the obligations of the State, local councils and private certifiers in administering the various Planning Approval Pathways²⁷ and associated Development Controls. There are both direct and indirect impacts arising from the planning legislation on walking and cycling:
 - Direct impacts: through legislating that developments contribute towards the provision of supporting public infrastructure (increasing demand for new walking and cycling infrastructure to support new developments).
 - Indirect impacts: through the ease with which greenfield and brownfield developments can progress through the planning system and move from planning through construction to increase the overall residential and commercial stock of real estate, and the creation of destinations and attractors that generate walking and cycling trips.
- **State planning policies:** A range of State planning policies impact active transport, from Infrastructure funding policies to State Environmental Planning Policies (SEPP) that streamline the approval processes for upgrading demand-generating

²⁷ Source: <https://www.planning.nsw.gov.au/Assess-and-Regulate/Development-Assessment/Planning-Approval-Pathways>

infrastructure such as education facilities, corridor protection for transport or other major infrastructure, and protection of the natural environment. As with the planning legislation discussed above, there are both direct and indirect impacts.

- *Local planning policies:* Council policies and strategies impact a range of aspects in relation to walking and cycling — from the approach to managing Developer Contributions (7.11 contributions or 7.12 levies) to the overall strategic direction and planning for walking and cycling in the council area (what type of infrastructure is to be provided in different street typologies). As with the planning legislation discussed above, there are both direct and indirect impacts.
- *Transport planning policies:* In their role as 'active transport' modes, walking and cycling infrastructure planning is influenced by a range of transport policies, including the Movement and Place framework, walking strategy, cycling strategy, Road Space Allocation Policy, walking space guides, and mode-specific guidance for assessing interventions such as the Australian Transport Assessment and Planning (ATAP) active travel guidance²⁸. There are also secondary impacts on infrastructure outcomes as a result of planning for other modes.
- *Asset Design Standards and Guidelines:* The delivery of walking and cycling infrastructure is ultimately an engineering and construction exercise, where the physical characteristics and constraints of the environment where the infrastructure intervention is to be made will influence the options available.
 - In general, walking and cycling facilities are designed by road engineers, who call upon design guidance which includes the Austroads Guide to Road Design (Part 6A Walking and Cycling), Austroads Guide to Traffic Management (Part 4: Network Management, and Part 5: Road Management), and relevant Australian Standards. In addition, TfNSW issues Supplements to Austroads guides and Australian Standards and Technical Directions which document mandatory practices to be applied in NSW.
 - Asset design standards and guidelines are primarily based on a 'predict and provide' approach to road corridor capacity planning for motor vehicles, using standardised assumptions for forecasting future traffic demand based on historical observations²⁹.
 - Decisions taken about road widths for new, or upgraded roads, for example, impact upon the walkability of an area, and can create the need for new or upgraded walking and cycling infrastructure such as unsignalised or signalised pedestrian crossing facilities to overcome issues of safety and severance. The asset design guidelines provide guidance as to the types of appropriate infrastructure.
- *Operating Standards and Guidelines:* A range of operating standards and guidelines influence the demand for new and upgraded walking and cycling infrastructure.
 - For example, when a council seeks to provide an unsignalised crossing facility across a road, there is an TfNSW (RMS) Supplement to the Austroads Guide³⁰ that requires numerical 'warrants' to be met prior to a site being eligible for a pedestrian (zebra) crossing. A warrant in this context is a mathematical construct that forms an 'objective' measure of conflict between pedestrians and motor vehicles as a proxy for the level of risk at a particular location.

²⁸ Source: <https://www.atap.gov.au/mode-specific-guidance/active-travel/index>

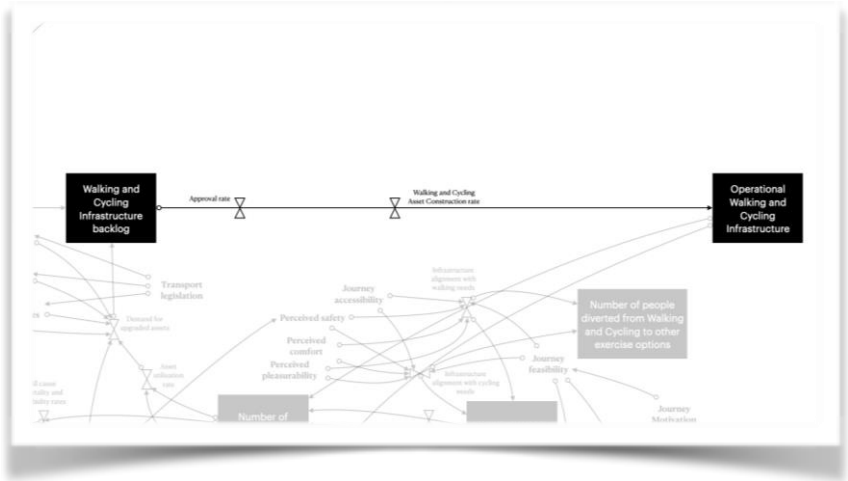
²⁹ Source: Transport (RMS) Technical Direction TDT 2013/04a Guide to Traffic Generating Developments — <https://www.rms.nsw.gov.au/trafficinformation/downloads/td13-04a.pdf>

³⁰ Source: Transport (RMS) Supplement to Austroads Guide to Traffic Management Part 10: Traffic Control and Communication Devices (2016) — https://www.rms.nsw.gov.au/business-industry/partners-suppliers/documents/austroads-supplements/s-gtm_10.pdf

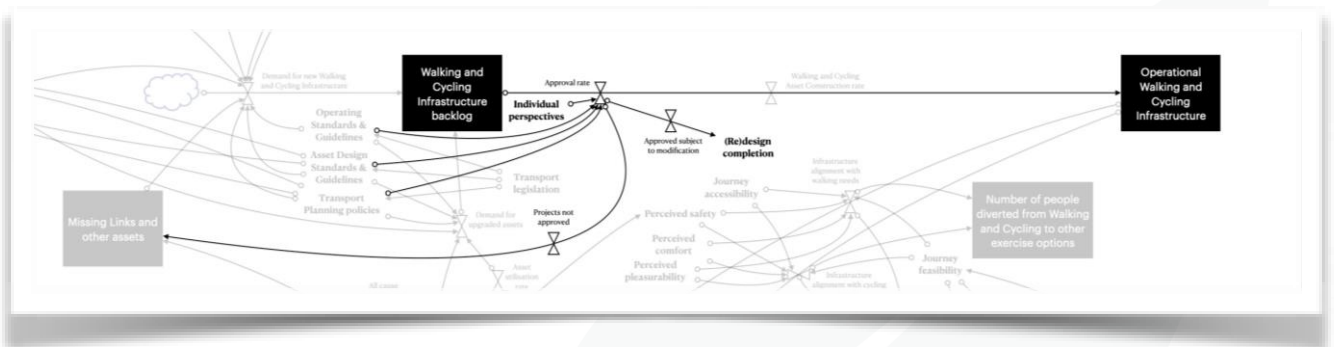
- For signalised crossings, there is a TfNSW (RMS) Guideline³¹ that specifies the 'warrants', or conflict conditions, that must be met for signalised marked foot crossings at intersections or mid-blocks.

The model explained - supply side factors

10. From a supply side perspective, the focus of the model is around the factors that drive the rate at which the *Walking and Cycling Infrastructure backlog* is turned into *Operational Walking and Cycling Infrastructure*. In the simplest terms, the rate at which the overall Walking and Cycling Infrastructure backlog is addressed is a function of the governance framework (the *Approval rate*) and the speed with which infrastructure is delivered (the *Walking and Cycling Asset Construction rate*).



11. As the supply of walking and cycling infrastructure changes over time, so the demand-side dynamics will adjust to reflect the relative change in the overall attractiveness of walking and cycling versus the other modal options.



From a governance perspective, there are an array of factors that influence the *approval rate* for walking and cycling infrastructure, depending upon the delivery method. Different delivery methods include:

- Council-initiated proposals
- Transport-initiated proposals
- Infrastructure delivered as part of other Major Transport Projects
- Infrastructure delivered as part of a greenfield or brownfield development

³¹ Source: RTA Traffic Signal design, Section 2 - Warrants — <https://www.rms.nsw.gov.au/business-industry/partners-suppliers/documents/guidelines/complementary-traffic-material/tsdsect2v14-i.pdf>

Proposed interventions that impact on Local Roads and Regional Roads that involve the installation or removal of a prescribed traffic control device³² or Traffic control facility³³ are required to go through a Local Traffic Committee governance process in accordance with the Delegation to Councils for the Regulation of Traffic³⁴. A Local Traffic Committee (LTC) is a technical review committee which provides TfNSW, the Police, a local Councillor and the local State MP with the opportunity to review and support, or not, proposed measures.

Whilst the LTC has no decision-making powers, councils are required to refer all traffic related matters to the LTC prior to exercising its delegated functions. In the event that a proposal is not supported unanimously, or the council wishes to act contrary to unanimous LTC advice, then the council must notify the TfNSW and NSW Police representatives in writing of their decision, triggering a 14 period during which TfNSW or the Police may refer the decision to the Regional Traffic Committee, an independently-Chaired³⁵ appeals body whose decision is binding.

The decisions taken by the LTC can be informed by additional advisors, however the main considerations are the application of relevant policy, guidelines and standards, and the individual perspectives of the committee members. Proposals may either be approved subject to design modification (including an alternative facility type), rejected or approved without modification.

The process for TfNSW-initiated walking and cycling interventions involves application of the relevant policies, standards and guidelines by the relevant project design teams, with review and sign-off from subject matter experts a key governance step in project sign-off. In this context, however, the SMEs consulted tend to have a general traffic engineering background with limited involvement from walking or cycling SMEs.

The provision of infrastructure by developers is governed by the relevant sections of the EPA Act and the approach taken by individual councils to the provision of public infrastructure works as part of the conditions of approval for individual developments. The *approval rate for walking and cycling infrastructure* which is required as a condition of approval is therefore closely related to the rate of development approvals and availability of construction resources.

12. The Walking and Cycling Asset Construction rate is driven from three primary sources

- Council-initiated works (measurable through *Council capital infrastructure funds available*);
- State and Federally initiated works (measurable through *Public infrastructure capital*); and

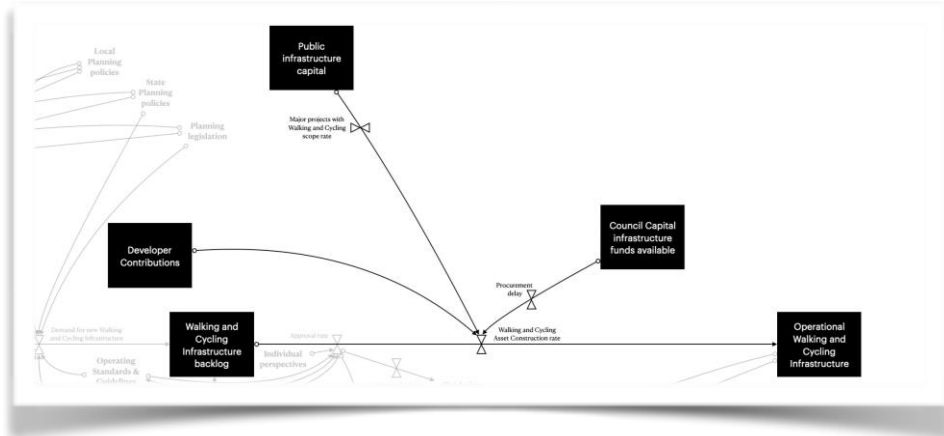
³² Prescribed traffic control device — a sign, signal, marking, structure or other device to direct or warn traffic on a road or road related area (or part of a road or road related area) that is prescribed by the regulations for the purposes of this definition. — Source: https://www.rms.nsw.gov.au/business-industry/partners-suppliers/documents/technical-manuals/ltcguidev13_i.pdf

³³ Traffic control facility — as defined by the Transport Administration Act, 1988 — Source: Ibid

³⁴ Source: *ibid*

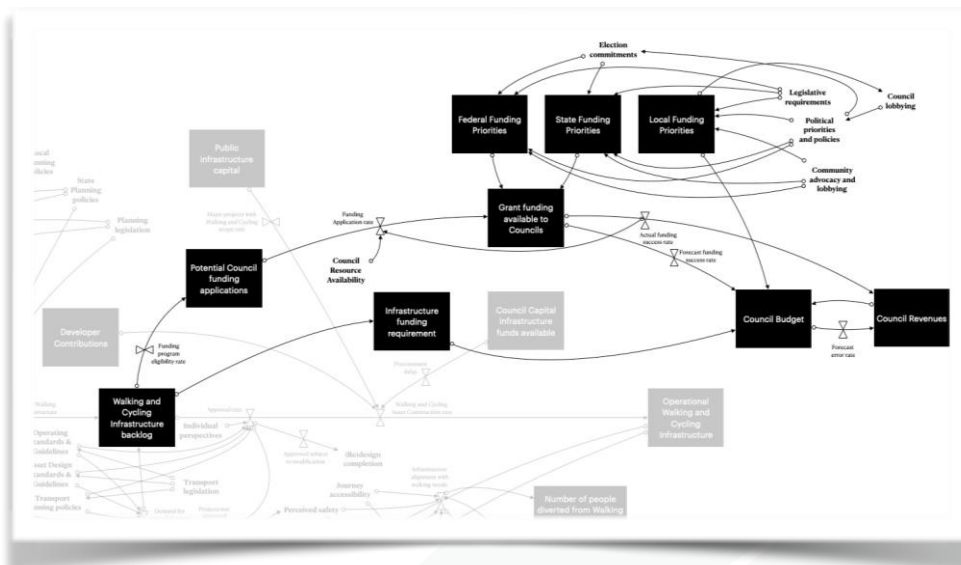
³⁵ Note: the Independent Chairperson is selected and appointed by TfNSW

- Developer initiated works (measured through *Developer contributions*).



The following sections explain each of the different pathways, starting with Council works.

13. Councils fund walking and cycling infrastructure from three primary sources, direct allocations for new infrastructure raised through the local council rates, grant programs operated by State and Federal governments, and other funding agreements arising from election commitments.



Each council makes decisions about the amount of funds raised through council rates that it will apply to providing new walking and cycling infrastructure (*Local funding priorities*). This sets the base walking and cycling capital works program via the *Council Budget*. Council decisions deliver on political priorities (articulated in local transport strategies), meeting legislative obligations (such as ensuring DDA compliance), and responses to community lobbying.

The second factor feeding into the council budget process is *Grant funding available to Councils*. There are a number of grant funding programs operated by the State and Federal Governments that provide funding for walking and cycling infrastructure. Examples include the NSW Government Active Transport (Walking and Cycling) Program, the NSW Stronger Country Communities, the NSW Local Infrastructure

Renewal Scheme³⁶, and the Federal Community Development Grants and Black Spot Program. In general, the grant process involves the following steps:

- *Political priorities and policies* are the genesis of *Federal and State Funding Priorities*. These priorities are informed by *community advocacy and lobbying* and *council lobbying* efforts on behalf of council's *Local Funding Priorities* around infrastructure needs.
- *State and Federal Funding priorities* are set by the government of the day. Grant-based funding programs are developed to meet targeted needs, and have a defined funding allocation and funding criteria defined to determine eligibility for funding applications.
- The degree to which councils apply for grant program funding is determined by the *funding program eligibility rate*, which results in a set of *potential council funding applications*.
- The eventual *funding application rate* is a function of *Council Resource Availability* to complete funding applications in accordance with scheme guidelines and rules.
- In general, the number of grant funding applications exceeds the funds available through each individual scheme (known as oversubscription). Assessment timeframes are often aligned to State and Government budget cycles, resulting in council applicants needing to make provisions in their own budgeting and planning processes for projects that are linked to grant funding — in particular, where shared funding arrangements are proposed (*Forecast funding success rate*).
- As a result of the variation in timings for grant funding decisions, council revenues may be higher or lower than forecast through the budgeting process, with the difference being the *forecast error rate*.
- The level of funding success experienced by a council has immediate and longer-term impacts:
 - immediate impacts include the *council revenue* impact of either receiving funds that weren't anticipated (for shared funding proposals), and therefore didn't receive budget allocation from the council in their budget or not receiving funds that were anticipated, with the council needing to cover the funding gap in order to complete projects that received a council funding allocation and commenced construction.
 - longer-term *funding application rate* impacts, as councils assess which grant funding programs are worthwhile dedicating resources towards future funding applications.

In certain cases, grant funding is available to councils with no strings attached — an example being Commonwealth Financial Assistance Grants (FAG), administered by the Federal Department of Infrastructure, Transport, Regional Development and Communications. Financial Assistance Grants are provided as a result of a legislative mechanism, the Local Government (Financial Assistance) Act 1995, although the first Commonwealth assistance to local government occurred as a result of the Whitlam Government's Grants Commission Act 1973³⁷.

³⁶ Note: The Local Infrastructure Renewal Scheme (LIRS) provides a subsidy in interest costs to enable councils to take out loans to fund projects — Source: <https://www.olg.nsw.gov.au/councils/council-infrastructure/infrastructure-and-grants/local-infrastructure-renewal-scheme/>

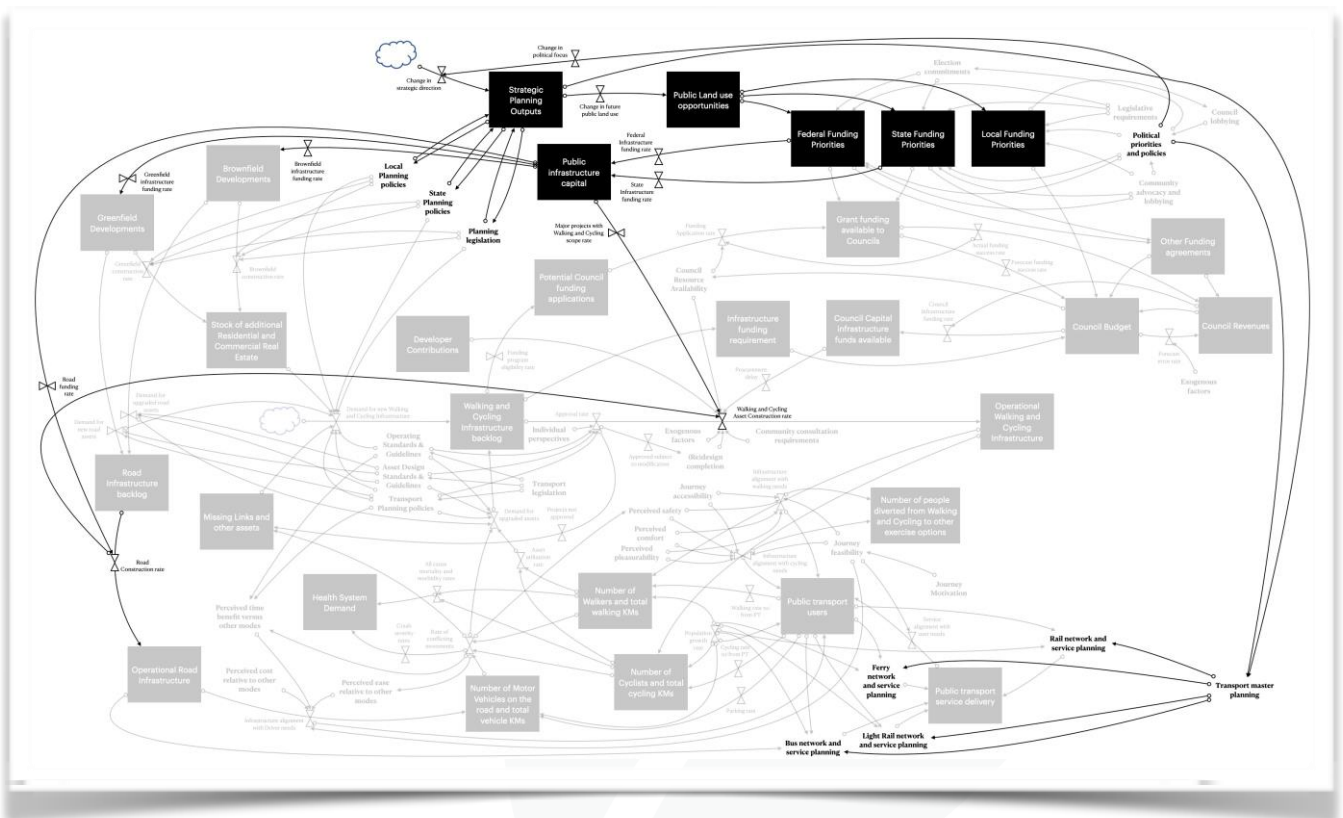
³⁷ Source: https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/rp/RP0708/08rp09#History

and cycling and decisions taken in the design of the new city will have a multi-generational impact on levels of walking and cycling in the area, with long term implications for the council responsible (*Council Funding Priorities*). A key component of the Future Transport 2056 strategy is focused on transport networks between, and within, the three cities — supporting the future land use plan.

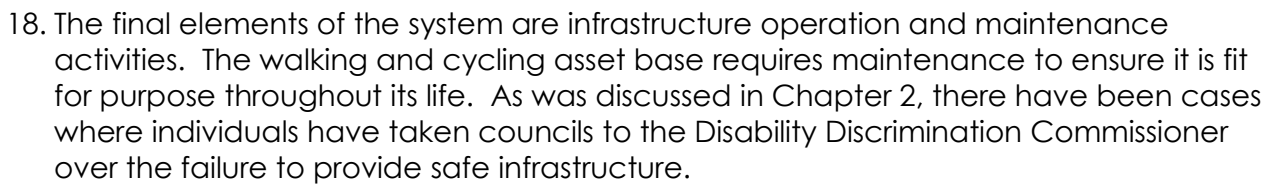
The prioritisation of investment in major transport projects such as Sydney Metro West, Parramatta Light Rail, Circular Quay Renewal, WestConnex and others have implications for walking and cycling. Investments in new transport assets require supporting infrastructure to ensure that they are accessible. As discussed in the demand-side model overview above, accessibility to and from public transport facilities is a key enabler of service demand. As a result, many State and Federal funded public infrastructure interventions have an element of walking and cycling scope. The overall *Walking and Cycling Asset Construction* rate is therefore influenced by the amount of projects that include walking and cycling as a part of their scope.

As projects are progressively delivered, public transport modal network and service planning activities utilise the new assets for service delivery, further impacting demand-side dynamics.

In addition to transport infrastructure investments, State and Federal funding is also applied in Greenfield and Brownfield areas for the delivery of new, and upgrades of existing public infrastructure. These investments include school and hospital infrastructure projects which enable and facilitate private sector investment through providing essential services to meet future community needs.



17. Changes in land use create opportunities that attract both public and private capital. From a *Private capital* perspective, potential returns are influenced by multiple factors, but opportunities for acceptable returns will result in *Greenfield and Brownfield land acquisition* for future *Greenfield and Brownfield developments*. The *Greenfield and Brownfield Construction rates* are influenced by *planning legislation* and *State and local planning policies*. The construction rates will influence the rate at which



The *Operations and Maintenance (O&M) backlog* is the sum total of O&M work that needs to be done. It is a function of planned activities (*preventive maintenance rate*) and unplanned activities caused by asset failure. The *asset failure rate* is influenced heavily by exogenous events, such as severe weather events that cause damage and result in assets becoming unsafe to use. It is not uncommon for fallen trees or broken branches to uproot and break or block footpaths following storm events, for example.

The diagram illustrates a network of stakeholders and their interactions. Key nodes include:

- Council Capital Infrastructure funds available**
- Council Budget**
- Council Revenues**
- Other Funding agreements**
- Operational Walking and Cycling Infrastructure**
- Operations & Maintenance backlog**
- Operations & Maintenance funding requirement**
- Operations & Maintenance funds available**
- Number of people diverted from Walking and Cycling to other exercise options**
- Public transport users**

Relationships are indicated by arrows, many of which are labeled with specific metrics or factors such as "Council funding rate", "Exogenous factors", "Planned O&M funding rate", and "Actual O&M significance rate". The diagram also includes several external inputs like "Demand for sporting and other leisure facilities", "Planning constraints", and "Quality consultation requirements".

removal, which, although rare, does happen from time to time³⁹.



³⁹ Note: For example, the removal of the College Street Cycleway in the City of Sydney.

Chapter 4: Issues analysis

This chapter provides a summary of the key issues raised in the stakeholder interviews.

Stakeholder engagement

A broad range of stakeholders were interviewed for the review. These included a spread of organisations, including councils in metropolitan and regional NSW, TfNSW, DPIE, GSC, NSW Office of Sport, NSW Ministry of Health, NSW Department of Education, NSW Treasury, Austroads, and walking advocacy groups in Sydney (Walk Sydney) and Melbourne (VictoriaWalks).

Appendix 1 provides a full list of stakeholders that were consulted during this review.

Key issues

A range of issues were raised during the stakeholder consultation process. At a high level, the issues grouped together into three overarching themes:

- Theme 1: The main beneficiaries of walking and cycling are not the asset owners
- Theme 2: The limiting factor on system throughput is the availability of funding to deliver infrastructure that meets user needs
- Theme 3: Legislation, policies, standards, guidelines and supporting systems are not yet aligned, limiting the ability to make, and the rate of, cultural change necessary to change outcomes

The system model introduced in the previous chapter will be used as the basis to explain each of the above.

Theme 1: The main beneficiaries of walking and cycling are not the asset owners

The majority of walking and cycling infrastructure is owned by the 128 local councils across NSW. From a systemic perspective, however, the majority of the economic benefits of walking and cycling accrue not to the asset owners, but to a range of other stakeholders. The following sections will show how benefits accrue to each of the following:

- The Community
- Councils
- Private Developers
- Individuals
- The Commonwealth Government
- The NSW Government

The Community

Towns and cities, neighbourhoods, public spaces and places, shopping areas, town and neighbourhood centres designed for all stages of life will result in greater use and physical

activity, and provide for increased social interaction and inclusion⁴⁰. There are therefore considerable wider economic and environmental benefits that accrue from walking and cycling. There are direct benefits as a result of lower environmental externalities relative to alternate modes of transport, including lower levels of noise, air and water pollution and lower greenhouse gas emissions versus motorised modes.

From an economic perspective, in addition to the direct benefit arising from economic activity in local 'bricks and mortar' businesses, the community experiences congestion benefits, agglomeration benefits and productivity benefits, as well as time and convenience benefits from local centres.

- From a congestion perspective, walkers and cyclists benefit the whole community through reducing the demand for road space and, to a lesser extent, demand for public transport capacity.
- Agglomeration benefits result from higher levels of business and residential density arising from more efficient land use as a result of less land being required for transportation infrastructure. Walking and cycling infrastructure is extremely space-efficient in terms of facilitating movement, especially when supported by mass transit. From a spatial perspective, ensuring the free-flow of private vehicles — especially for commuters — is a very inefficient use of land. The additional requirement for parking space for private vehicles can also represent an inefficient use of potentially higher-value commercial land.
- Productivity benefits accrue through high-value economic activity being located in close proximity via walking, which enables the majority of in-person (as opposed to online) retail and entertainment expenditure. Additionally, evidence suggests that adults who undertake regular physical activity are more productive at work and have a lower prevalence of sickness absence⁴¹.

Councils

Councils benefit indirectly from walking and cycling infrastructure, to the extent that the provision of walking and cycling infrastructure influences land values and, by proxy, council rates flowing into overall *Council Revenues*.

Through providing local infrastructure that is desirable for individuals, families and businesses, local councils have the capacity to attract *Private capital* into an area to fund new developments which allow for population growth and an increase the overall number of rate payers.

Private developers

Private developers benefit directly from walking and cycling infrastructure, having found that developments with high quality walking and cycling infrastructure and local amenities attract a market premium, and are more profitable.

Research conducted in 2016 by George Washington University (GWU) School of Business in the United States found that "Walkable, urban for-sale housing is by far the most expensive housing in the country. The range, depends on the market, between 40 percent and 200 percent greater than drivable, suburban housing," said GWU's Chris Leinberger, author of

⁴⁰ Source: <http://www.healthypaces.org.au/site/whatmakes.php>

⁴¹ Source: Does physical activity have an impact on sickness absence? A review. Downloaded from https://repository.lboro.ac.uk/articles/Does_physical_activity_have_an_impact_on_sickness_absence_A_review/9622424

the report. "Twenty-five years ago that relationship didn't exist because walkable (cities back then) was not valued."⁴²

Individuals

People who walk and cycle get a range of benefits from doing so. These include a range of physical and mental health benefits with reduced risk of many health problems including heart disease, type 2 diabetes, anxiety, depression, unhealthy weight gain, and even some cancers.

Beyond better health outcomes there are also direct financial benefits that result from walking and cycling infrastructure, with extremely low barriers to entry (none for walking, and a bike and a helmet for cycling), negligible maintenance costs, and zero operating costs. Every trip taken using 'active transport' modes only represents a direct saving relative to the alternatives.

From a recreation perspective, walking and cycling also offer financial savings relative to a number of the alternative options such as gym membership and sporting club fees. As Sport Australia noted in the analysis of the 2019 AusPlay survey results "Walking has the highest participation rate, but is rarely an organised activity so Australians spend far less on walking than the other top 20 activities. Australian adults spend approximately \$23million per year on walking participation, compared to more than \$3billion Australian adults spend each year on fitness and gym activities."⁴³

The Commonwealth Government

The Commonwealth Government benefits indirectly from walking and cycling in a number of areas:

- Deferring the need for major capital transport (road and rail) investments. For road investment, this reduces the pressure on the Commonwealth Government for additional payments to local councils over time through the Financial Assistance Grants program
- More successful communities result in higher levels of economic activity, which translates to higher business and income taxes collected and lower levels of welfare assistance payments
- The Commonwealth funds a number of different parts of the healthcare system, including subsidising medications through the Pharmaceutical Benefits Scheme (PBS), visits to local General Practitioners (GPs) through Medicare funding, and the joint-funding of public hospitals which are owned and operated by state and territory governments⁴⁴.

The NSW Government

After individuals and the community, the NSW Government is the primary economic beneficiary of walking and cycling infrastructure. There are a range of benefits that accrue, including:

⁴² Source: <https://www.cnn.com/2014/06/17/a-citys-walkability-drives-real-estate-values.html> — report referenced is at <https://smartgrowthamerica.org/resources/foot-traffic-ahead-2016/>

⁴³ Source: https://www.sportaus.gov.au/media-centre/news/australias_top_20_sports_and_physical_activities_revealed

⁴⁴ Source: <https://www.health.gov.au/resources/apps-and-tools/health-funding-facts/health-funding-facts>

- The higher the number of people that are engaging in physical activity, the lower the demand that is placed on the healthcare system for preventable chronic health conditions.
- The higher the utilisation of public transport services, the greater the level of cost recovery flowing back to the government.
- The more efficient utilisation of existing road corridor space results in deferring the need for additional expenditure on road capacity.
- The lower the rates of environmental pollution, the lower the cost of providing remedial treatments for pollution events
- Better environmental outcomes improve the liveability and attractiveness of NSW as a place to live and conduct business relative to other states and territories and, for Sydney, relative to other global cities, resulting in higher taxes flowing to the State government
- Higher land values resulting from more connected communities result in higher property sale prices and greater stamp duty revenues flowing to the State government
- More successful communities require lower levels of grant and other funding support from the State Government to address social disadvantage and other challenges

Theme 2: The limiting factor on system throughput is the availability of funding to deliver infrastructure that meets user needs

From a systemic perspective, one of the key issues identified was the size of the infrastructure backlog across walking and cycling modes. The lack of funding availability for walking and cycling infrastructure appears to be related to a range of issues:

- Asset ownership model results in limited investment from the State
- Ability of councils to raise revenue is limited
- Infrastructure backlog exceeds funding availability
- Competing demand for Capex investments
- Rate of growth in O&M asset base exceeds growth in O&M funding
- Timing of grant funding announcements
- Importance placed on walking and cycling is low versus other modes
- Lack of dedicated walking and cycling human resources
- De-scoping of walking and cycling from other infrastructure investments

Asset ownership model results in limited investment from the State

As detailed in Chapter 2, NSW councils are the owners of the vast majority of walking and cycling assets in the state, including the footpaths alongside State Road corridors in 'road related areas'. A range of stakeholders noted that the State government has adopted the position over many years that footpaths are 'a council issue'.

When the State government provides funding for council-owned assets, this is done through Operational Expenditure (Opex) as the State does not own, and is therefore

unable to capitalise the asset on its balance sheet. Conversely, when councils fund walking and cycling infrastructure, it is treated as Capital Expenditure (Capex). This distinction has an impact, as the funding source impacts the resultant accounting and tax treatment of the investment. Where the State makes infrastructure investments through Capex (as is the case for the majority of public transport investment, for example), these impact the State's debt position, whilst Opex costs impact the State's budget position.

This is a complex issue, and raises a number of questions: not least, what the underlying reason is for investments in public assets, which ultimately all have the same source (the public) yet are treated so differently as a result of accounting and tax reasons.

Ability of councils to raise revenue is limited

The main source of directly generated revenue for councils is rates. In NSW council rates are primarily based on property land values, which are determined once every three years by the NSW Government Valuer General⁴⁵. Increases in land value do not automatically result in higher rates, however, as they are also a function of the local council's rating structure and limits to increases set by the NSW Independent Pricing and Regulatory Tribunal (IPART) (known as Rate Pegging).

All rateable land⁴⁶ within a local government area is categorised as either residential or business. The rates are normally a combination of general rates, stormwater charges and waste services charges.

There are no councils in NSW that are self sufficient on rate income alone. As of the latest data available (for 2017/18) from the NSW Office of Local Government⁴⁷:

- 88% of councils in NSW received more than 20% of their revenue from external grants and contributions;
- 38% of councils in NSW received more than 40% of their revenue from external grants and contributions; and
- 17% of councils in NSW received more than 50% of their revenue from external grants and contributions.

Parking also forms an important revenue stream for many councils, including both parking fees and parking fines. For example, total revenue from parking fines across all councils in NSW in 2018/19 amounted to more than \$199m, with more than 1.2 million parking fines issued⁴⁸. Many councils are therefore reluctant to forgo parking spaces to provide dedicated cycle facilities.

Demand for new infrastructure (Infrastructure backlog) exceeds funding availability

There was consistent feedback from all councils interviewed that the amount of funds available for walking and cycling infrastructure is insufficient to meet the backlog of demand for new walking and cycling assets.

⁴⁵ Source: https://www.valuergeneral.nsw.gov.au/council_rates

⁴⁶ Note: Some properties, such as churches, schools and hospitals, are exempt.

⁴⁷ Note: Analysis based on the 125 Councils where data was available. 3 councils are not included in this analysis

⁴⁸ Source: NSW Office of State Revenue — <https://www.revenue.nsw.gov.au/help-centre/resources-library/Parking-offences-DSF-011.xlsx>

In the case of cycling, where a recent Strategic Business Case was prepared for the implementation of a Principal Bicycle Network in NSW, it was identified that at legacy investment levels it would take over 250 years to see the network implemented.

Competing demand for Capex investments

Councils are responsible for over \$150 billion worth of assets in NSW that provide communities with roads, buildings, water supply, sewer networks, and stormwater drains⁴⁹. Unsurprisingly, there are many competing demands for the capital budget allocation each year. Many of the councils interviewed stated that the annual council-specified budget for new footpath infrastructure was less than \$1m per year.

Rate of growth in O&M asset base exceeds growth in O&M funding

Total council asset maintenance expenditure across all NSW councils⁵⁰ in 2017/18 was over \$1.68 billion, whereas the required asset management expenditure was \$1.76 billion. This meant that over the course of the 2017/18 financial year alone, the maintenance backlog grew by \$80 million.

In relation to walking and cycling infrastructure, the asset base managed by local councils grows annually as a result of all infrastructure added, including infrastructure constructed by third parties as a result of developer contributions and other walking and cycling infrastructure constructed as part of the positive provisions of State Significant Infrastructure projects, for example, which become council-owned assets on project completion.

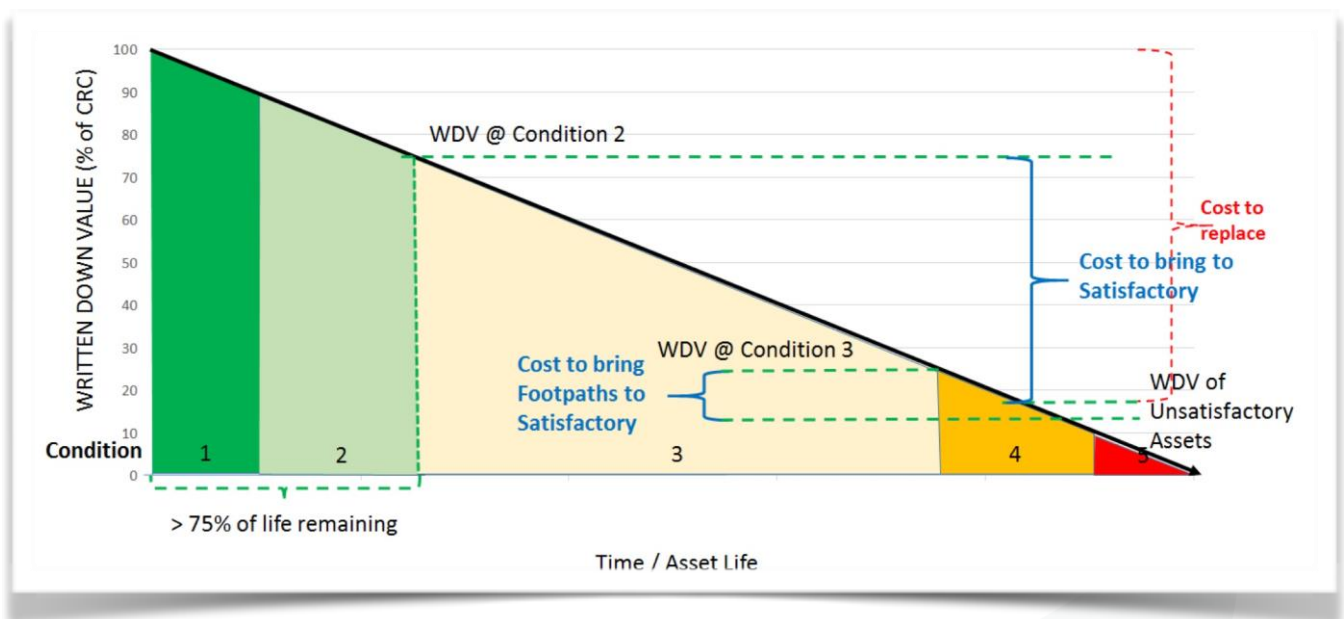
Councils have taken a range of approaches to managing the impacts of the increasing asset base. These include:

- Limiting the delivery of new walking and cycling infrastructure — constraining the rate of growth of the asset base requiring future O&M expense. For example:
 - local council policies determine where footpaths should be provided, and to what extent
 - anecdotal evidence was provided of councils requesting developers remove proposed footpaths from both sides of the road in a greenfield development to reduce the future O&M burden
- Using asset-replacement strategies for life-expired assets of building replacement assets with a lower level of spatial capacity (i.e. footpath width) than the asset they replace
 - There is anecdotal evidence of this, but little formal proof
- Changing the classification of what constitutes “a satisfactory condition” for the purposes of asset replacement. Every year, councils are required to report on their performance against a set of performance measures to the NSW Office of Local Government. These performance metrics include the Infrastructure Backlog Ratio (IBR), Asset Maintenance Ratio, and Asset Renewal Ratio.

⁴⁹ Source: <https://www.olg.nsw.gov.au/councils/council-infrastructure/infrastructure-and-grants/infrastructure-audit/>

⁵⁰ Note: Total spend for 125 of 128 councils in NSW — 3 councils data is not included in this analysis as it is not in the dataset.

- The IBR is calculated as the Estimated cost to bring assets to a satisfactory condition / Total Written Down Value (WDV)⁵¹ of infrastructure, buildings, other structures and depreciable land improvement assets
 - the standard accounting treatment reflects the practice of replacing assets in a poor or severely declining condition nearing the end of their lives with a reconstructed asset in new condition (Condition 1 “Excellent” on a 5-point scale)
 - many councils, however, calculate the IBR based on community ‘satisfaction’ with an asset standard for footpaths as being fair (Condition 3 “Fair” on a 5-point scale) which has the impact of underestimating the true replacement cost for walking and cycling assets as reported by Councils to OLG⁵², dramatically reducing the cost to bring footpaths to a ‘satisfactory’ condition (see figure below)⁵³



- Anecdotally, when Waverley council undertook their community consultation (approximately 10 years ago) about what footpath condition constituted satisfactory, per the approach described above, just 20 members of the community were engaged as the representative sample

Timing of grant funding announcements

When councils make grant funding applications, they often do not find out the result until some months later. In some cases, councils may not find out that they have been successful in a funding application until very late in the financial year (May or June, for example), or even into the following financial year. As many grants programs (including the Active Transport (Walking and Cycling) Program) provide funds on the condition that

⁵¹ Note: The WDV is calculated as the Current Replacement Cost (CRC) less straight line depreciation to current ‘market’ value. A WDV of 50% of CRC would indicate that half of the asset base has reached the midpoint of its useful life.

⁵² Note: For example, see Wollongong Council’s submission to IPART “Summary Workings and Notes - Fit for the Future Infrastructure Ratios” — https://www.ipart.nsw.gov.au/files/036e8811-de4a-4448-acde-7ecf5303985e/Attachment_3_-_Infrastructure_Worksheets.pdf

⁵³ Source: *ibid*, p2

they are expended in the year in which they are received, this delay in communicating funding outcomes has an impact on project delivery.

Especially in the case where grant funding is sought for walking and cycling infrastructure, the application is made using a concept design. Detailed design is required prior to construction commencing, however, and often this is a cost that is outside of what councils can recover through construction-specific programs. Risk-averse councils will often delay detailed design for projects seeking external funding until there is certainty that the project will go ahead. This results in delays to project delivery as design and delivery procurement, detailed design and community consultation activities are undertaken prior to construction commencement.

Importance placed on walking and cycling is low versus other modes

The relative importance placed upon walking and cycling is low when compared to other modes of transport, resulting in issues of social equity. This is because a significant proportion of the population do not have either the means to afford, nor access to motor vehicles (whether by choice or not) — the 'default' mode of transport for much of NSW. Poor active transport connections — from home to final destinations or to bus and train stops — therefore limits the economic, social and recreational opportunities for these citizens, putting them at an unfair disadvantage. In many parts of regional and rural NSW, access to public transport is also limited.

All journeys are dependent upon walking infrastructure to some extent. This may be as a means to provide access to public transport, or in the form of a footpath to provide access to or egress from car parking. Walking infrastructure, in particular, is often overlooked in its importance in providing connectivity. It is also inconsistent in its requirements and provision, depending upon the location and the road environment.

The TfNSW Active Transport Program budget in 2019/20 was \$16.8m⁵⁴, which represents funding available to both Walking and Cycling infrastructure projects through proposals from local councils. From a Major Works Allocation to TfNSW of \$8.75b, the dedicated State funding for 'active transport' was 0.2%. By way of a simple comparison, the amount allocated to New Buses to Cater for NSW Services 2019-20 (part of a rolling annual program) was \$181m⁵⁵ — more than 10 times the amount.

There is a recognition that the State provides funding for the delivery of walking and cycling infrastructure through other mechanisms, including as a component of larger transport projects such as Sydney Metro, Parramatta Light Rail and the Northern Beaches Hospital Road Upgrade projects (as examples). The fact remains, however, that within TfNSW there is no advocate for walking as a dedicated mode, or cycling as a dedicated mode. The result is that often what is delivered is shared 'active transport' infrastructure that meets the need of neither pedestrians or cyclists appropriately.

In the recent past, the only pedestrian infrastructure that the State would fund through the Active Transport Program was shared path infrastructure — designed to be shared by walkers and cyclists. A number of council anecdotes were provided in the interviews that shared path funding was subsequently applied for through the Active Transport Program where what was actually required, and desired, by councils was footpaths.

⁵⁴ Source: NSW Infrastructure Statement 2019-20, Budget Paper No.2 — https://www.budget.nsw.gov.au/sites/default/files/budget-2019-06/Budget_Paper_2-Infrastructure%20Statement-Budget_201920.pdf, p 5-47.

⁵⁵ Source: *ibid.*

There is an increasing body of evidence that shared paths deter walkers (especially those who are elderly or frail) from using the facilities due to the potential conflict with cyclists⁵⁶. Given recreational walking is the primary form of exercise in all age cohorts for both males and females aged 45 and above (35 and above for females, #2 for males aged 35-44 behind fitness/gym), the potential impact of providing infrastructure that deters walking may have unintended health consequences in the longer term.

Building good quality walking and cycling infrastructure typically requires decisions about road space allocation to be made. These decisions mean that other modes, especially general traffic, can be impacted. The difference in budget between walking and cycling and other modes, outlined above, is considered by stakeholders to be a concrete example of the difference in priority between modes. This is manifest not only in funding, but also 'on the ground' through road space allocation decisions.

Lack of dedicated walking and cycling human resources

The vast majority of councils do not have dedicated resources for walking or cycling, or even walking and cycling. In most cases the planning and delivery of walking and cycling infrastructure is undertaken by other roles within councils, including transport planners, traffic engineers, urban designers and landscape architects. This often results in a range of suboptimal outcomes for walking and cycling initiatives, including:

- Councils having limited resources to understand what they are able to apply for through the different grant funding schemes.
- Councils choosing what grants and schemes to apply for based on previous success rates;
- Delivery of shared infrastructure, conflating the needs of walkers and cyclists as 'active transport' users;
- Facilities designed to meet minimum requirements, without adequate provisioning for future capacity expansion, or space provisioning for dedicated infrastructure; and
- Facilities delivered with road infrastructure assets embedded (for example, shared paths and footpaths with road signs limiting the effective carriageway width).

De-scoping of walking and cycling from other infrastructure investments and up-scoping of walking and cycling projects

One of the common pieces of feedback received from both councils and other transport stakeholders was that walking and cycling infrastructure is not viewed as 'core scope' in the context of transport projects that are focused on other modes. Examples were provided where walking and cycling infrastructure was de-scoped from major projects due to budget constraints.

In addition, where walking or cycling infrastructure projects are planned in brownfield environments, the view is that there are many un-related areas of scope that get added to resolve other legacy issues, making the funding requests appear to be 'gold-plated'.

⁵⁶ Note: For further information, see Shared paths: Discussion of research findings and key safety issues, <https://roadsafety.transport.nsw.gov.au/downloads/shared-paths.pdf> & Shared Paths — the issues, https://www.victoriawalks.org.au/Assets/Files/Shared_paths_the_issues_v1.pdf

For example, many footpaths have utilities and services situated beneath them — instead of the road corridor. In areas where footpaths or shared path infrastructure is to be built in a roadside 'nature-strip' environment, issues are often uncovered as a result of digging up the existing surface to lay the new footpath, or to install dedicated cycling infrastructure in existing road corridors. These issues can involve drainage, tree root ingress to existing utilities and other legacy constraints, which add cost and scope to resolve.

Theme 3: Legislation, policies, standards, guidelines and supporting systems are not yet aligned, limiting the ability to make, and the rate of, cultural change necessary to change outcomes

In the course of undertaking this review, a number of existing interventions were identified that are intended to positively impact the outcomes of the walking and cycling system over time. What has also become clear, however, is that the success of these interventions will likely be limited without further issues being addressed. This section will discuss the influence that the following aspects are having on system performance:

- political priorities and policies,
- planning legislation,
- transport legislation,
- local planning policies,
- state planning policies,
- transport planning policies,
- asset design standards and guidelines,
- operating standards and guidelines
- operational governance processes

Political priorities and policies

From a cultural perspective, the system outcomes reflect the priorities that drive the system structure and behaviour.

As discussed in earlier sections, despite being the primary beneficiary of the benefits of greater levels of walking and cycling participation, the NSW Government does not place a high priority on achieving walking and cycling outcomes. This is evidenced in a number of ways:

- Conflation of the needs of two distinct transport user groups into 'active transport' users, with a combined funding program that forms 0.2% of total funding for Major Programs
- Consideration that the provision and funding of footpath infrastructure in 'road associated areas' is primarily the responsibility of councils — even when adjacent to State Roads
- Change in approach to the Active Transport (Walking and Cycling) Program has seen projects seeking multi-year funding become ineligible, with a requirement that projects be delivered in the same year as funding received resulting in a range of inefficiencies and a lack of 'shovel-ready' projects

Planning legislation

Current planning legislation provides a great deal of flexibility for councils in their dealings with developers, however there are a number of areas where issues result. For example:

- There is no imperative for pedestrian and cycling infrastructure to be delivered in new development as infrastructure that serves distinct user groups with differing needs
- There is no minimum level of walking and cycling infrastructure requirement for new developments
- There are no requirements to consider the desired speed zone environment for an area as part of the design process or planning principles — road corridor design and design of the urban realm are considered independently

Transport legislation

From a transport legislation perspective, there is a perception that current legislation prioritises motor vehicle throughput and minimising delay at the expense of walkers and cyclists.

Walking and cycling advocates have highlighted some consequences of the existing legislation, including:

- The requirement for wearing a bicycle helmet has clear safety benefits for the individual: a UNSW review suggest that helmets can reduce the risk of serious head injury by 69%, and the chance of a fatal head injury by 65%⁵⁷.
- Stakeholders have highlighted, however, that mandating helmets acts as a deterrent to potential cyclists: a 2011 University of Sydney survey suggested cycling levels in Sydney could more than double if helmet laws were repealed⁵⁸. This leads to a highly complex debate about the increased risks to individuals versus the benefits to overall population health from greater cycling.
- Stakeholders have noted that a long-term change in the quality, distribution and safety of cycling infrastructure, with concomitant behaviour of all road users is likely to have a major effect on cycling safety. Stakeholders point to examples such as the Netherlands, which is one of the safest countries in the world to cycle, yet where helmets and high-visibility clothing are not mandated and considered unusual.
- The requirement to dismount from a bicycle to use crossing facilities shared with pedestrians (unless a signalised bicycle lantern exists) discourages the use of cycling facilities such as shared paths by experienced cyclists in favour of on-road riding with the general traffic, increasing crash risks.
- For shared environment intersection treatments, where an at-grade footpath treatment is provided across a road corridor, as in the example below, the NSW Road Rules treat this area not as a footpath, but instead as a road where pedestrians give way to vehicles exiting the street⁵⁹.
- Walking advocates view the requirement for pedestrians to give way to cars where a footpath crosses a side road (in what is effectively a shared space) as an example of

⁵⁷ Olivier J, Creighton P. Bicycle injuries and helmet use: A systematic review and meta-analysis. International Journal of Epidemiology 2017;46:278-292. See:

<http://unsworks.unsw.edu.au/fapi/datastream/unsworks:46422/bindc791c6a-2025-4ac7-81f6-01b3bbcd8154?view=true>

⁵⁸ Rissel and Wen, 2011, *The possible effect on frequency of cycling if mandatory bicycle helmet legislation was repealed in Sydney, Australia: a cross sectional survey*. Health Promotion Journal of Australia 2011; 22: 178-83.

⁵⁹ NSW Road Rules 2014, Rule 353(1).

motor vehicles being given unfair priority. The alternative view is that requiring pedestrians to give way to cars where footpaths cross side roads – and therefore having to be more aware of their surroundings - is safer than cars giving way to pedestrians at these locations.



Knowledge of the NSW Road Rules

TfNSW uses a range of approaches to educate the community about road safety including through the school curriculum, the graduated licensing scheme, public education campaigns, annual road rules awareness week and community-based road safety programs.

Drivers and motorcyclists are required to pass tests demonstrating knowledge of the NSW Road Rules. These include a computer-based Driver Knowledge Test (Rider Knowledge Test for motorcyclists) prior to obtaining a Learner licence, and a computer-based Hazard Perception Test and practical driving test prior to obtaining a Provisional P1 Licence. A riding test or pre-provisional rider training course apply for motorcycle riders, or vehicle class specific knowledge test and Heavy Vehicle Competency Based Assessment or Heavy Vehicle Driving Test for Heavy Vehicle licences.

Whilst changes and updates are made to the NSW Road Rules from time to time, there is no universal requirement for drivers to undergo any re-testing of the rules when renewing their driver licence. The cost of doing so is considered prohibitive. NSW has adopted a targeted approach where licence holders identified as high risk - such as those who exceed demerit point limits or are convicted of drink-driving twice in five years - are required to re-sit and pass the Driver Knowledge Test.

There is a legal obligation for drivers to be aware of the Road Rules and to keep abreast of changes, with any failure to comply actionable by enforcement authorities. While drivers have an obligation to demonstrate knowledge of the law, pedestrians and cyclists that share the road environment have no obligation to read or be tested on the relevant laws.

Local planning policies

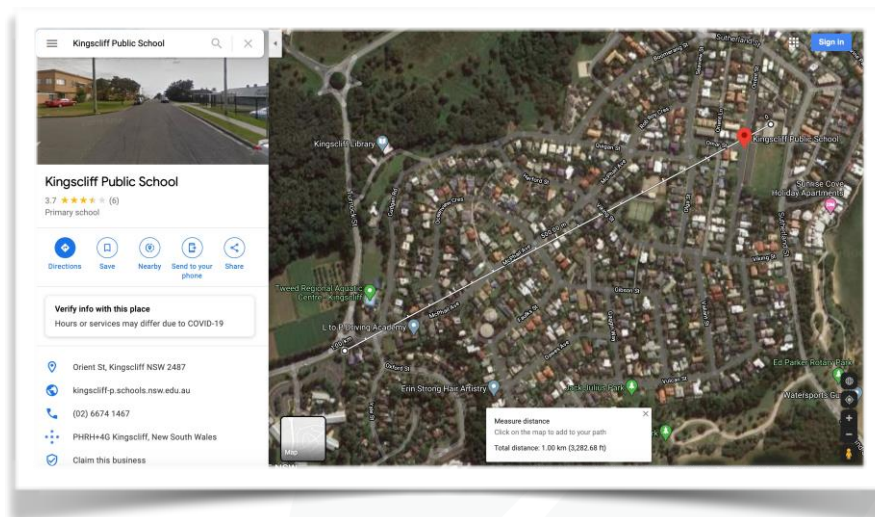
Local council planning policies dictate their approaches to walking and cycling infrastructure. This includes:

- the approach and prioritisation framework for delivering active transport infrastructure; and
- the approach to managing developer contributions.

With regard to the approach and prioritisation of active transport infrastructure, there are implications for walking and cycling where relevant local and state policies do not align. For example, the TfNSW-operated School Student Transport Scheme (SSTS) gives eligible students free or subsidised travel between home and school on NSW public transport. Under scheme eligibility criteria children in Year 3 or over must live more than 1.6km straight line distance or 2.3km walking distance or further from the school to qualify for free transport, with ineligible children provided access to a discounted School Term Bus Pass valid on school days throughout the school term⁶⁰.

With the current approach to footpath funding, whereby councils are largely responsible for funding footpath infrastructure, access to adequate walking and cycling infrastructure is not always available for those families living inside the school catchment that don't qualify for free travel. 289,000 students across NSW across 2,200⁶¹ schools live within catchment, yet in many cases the infrastructure doesn't meet parental expectations for safe walking, encouraging more parents to drive their children to school and increasing congestion, conflict, delays and risk for those that do choose to walk.

One example raised in the interviews was that of Kingscliff Public School in northern NSW, where many of the surrounding roads do not have footpaths on one side of the road, let alone both.



Another case raised was that of Meadowbank Education and Employment Precinct (in Ryde LGA), which is due to open in 2022 and will include new Primary and Secondary Schools and improved TAFE facilities. A few issues were raised by the council in relation to this project, including:

- the lack of parking for teachers included in the plans;

⁶⁰ Source: <https://apps.transport.nsw.gov.au/ssts/termBusPass#/termBusPass>

⁶¹ Source: Interviewee

- the provision of only 7 bicycle racks; and
- an application for funding assistance from the State Government to widen footpaths and associated infrastructure improvements was rejected as footpaths are 'a council issue' (Council's rationale being that the Education department is 'causing the problem')

As discussed in Chapter 1, there are two primary approaches open to councils with regard to managing developer contributions, section 7.11 contributions, which are related to specific developments and section 7.12 levies which relate to the total development cost. The approach adopted by a council can have implications for the ability to deliver walking and cycling network improvements in a strategic manner. Anecdotally, many councils do not have formalised walking or cycling strategies to guide decision making.

State planning policies

State planning policies determine how long-term land use changes, which has implications for local government areas. For example, the decision to build a new school in a LGA results in a fundamental long-term change in the nature of walking and cycling in the surrounding school catchment, as discussed above. This mis-alignment of State-based planning and local planning outcomes can have long-term consequences, with habitual behaviours, such as driving kids to school, once ingrained becoming incredibly hard to change⁶².

Transport planning policies

TfNSW, in line with other transport agencies around Australia and globally has adopted the Movement and Place approach to transport network planning. This approach represents a fundamental change in the way in which planning is undertaken in the State, moving away from a legacy 'predict and provide' paradigm (forecasting future demand using historical trends to determine capacity requirements) towards a 'vision and validate' approach (starting with the ultimate vision for the place and developing an approach to deliver on the vision).

This strategic shift is not yet fully aligned with the way in which transport practitioners are delivering tactical interventions, however. For example, TfNSW requires road planners to follow its Technical Directions, which, together with the Austroads Guidelines and Australian Standards provide the suite of design guidance applied by professionals.

There are a range of policy and guidance documents currently in development by TfNSW that will also be subject to similar issues as have been identified for M&P implementation. These include the TfNSW Road Space Allocation - Policy and the Walking Space Guide. Changes to existing, and potentially additional, supplements will be required to enable guidance documents to reconcile newer Movement & Place approaches with current conventional practice.

⁶² Note: The UK Behavioural Insights Team identified a range of behavioural challenges relating to sustainable transport choices — see <https://www.transportxtra.com/publications/local-transport-today/news/56894/changing-travel-behaviour/>

Asset design standards and guidelines

In addition to the alignment issues identified above, other issues in relation to asset design standards and guidelines have been identified through the review which are impacting upon walking and cycling outcomes. Issues were identified in relation to the following documents:

- Austroads Guidance
- TfNSW (RMS) Technical Directions

The impact of design guidance on road design, in particular areas of 50km/h, or higher, which has been the traditional default speed limit on Local Roads. The Austroads Guide to Road Design states that “For urban areas, current practice has been to adopt a design speed 10 km/h higher than the posted speed limit”⁶³.

- The impact of designing roads for the posted speed limit plus 10km/h has been to create road environments in which drivers feel safe exceeding the posted speed limit.
- It is understood that stakeholder engagement with councils for the Walking and Placemaking SBC, approximately one third of councils expressed an interest in reducing the speed limit of roads in the centre of their urban areas to 30 or even 20km/h — but felt constrained to do so by guidance and convention⁶⁴.

The TfNSW (RMS) Technical Direction TDT2013/04a: Guide to Traffic Generating Developments “provides guidance on a number of matters related to the traffic impacts of land use developments, most notably on matters relating to traffic generation and parking. Its audience extends beyond that of traffic authorities (RMS and Councils) and is widely used throughout Australia.”⁶⁵

- The guide provides a range of trip generation rates to be used in forecasting motor vehicle demand and/or parking demand assessments, and is a key document in current asset design, embedding the ‘predict and provide’ philosophy in direct opposition to the strategic approach of Movement and Place.
- Wide road corridors create significant severance impacts for walking, in particular — especially vulnerable users such as children, the elderly and the mobility impaired.

Operating standards and guidelines

From an operational perspective, two primary areas were identified through the review that are impacting on walking and cycling outcomes. These are:

- TfNSW (RMS) Supplements to the Austroads Guides; and
- the allocation of traffic signal time to walkers and cyclists.

The TfNSW (RMS) Supplement to Austroads Guide to Traffic Management Part 10: Traffic Control and Communication Devices (2016) outlines where NSW practice differs to that contained in Austroads. One area of particular impact on walking relates to the requirement to meet ‘warrant’ criteria prior to the installation of pedestrian traffic signals, pedestrian (zebra) crossings and children’s crossings. Warrant criteria are a measure of conflict, where pedestrian demand to cross a road corridor (P) is multiplied by vehicle

⁶³ Source: Austroads Guide to Road Design, Part 3: Geometric Design, Section 3.1, p 7 (2016) — https://austroads.com.au/publications/road-design/agrd03/media/AGRD03-16_Guide_to_Road_Design_Part_3_Geometric_Design_revised_Apr_2020.pdf

⁶⁴ Note: As at the time of writing, the NSW Speed Zoning Guidelines are in the process of being updated, with many of the issues raised by stakeholders expected to be addressed through this process.

⁶⁵ Source: <https://www.rms.nsw.gov.au/trafficinformation/downloads/td13-04a.pdf>

demand (V) in the three busiest one-hour periods in a day. If the P*V calculation exceeds the warrant level, then different types of infrastructure are deemed to be 'warranted'. This system has created a number of issues:

- The warrant criteria are the same for all road types. Originally developed for the State Roads managed by RTA/RMS, at some point in time they also were extended to other road types, including those where councils are the roads authority
- The warrant criteria are based on existing demand levels. Multiple examples were shared by councils where pedestrian infrastructure has not been approved to be delivered in advance of 'pedestrian generating developments' — an approach at odds with that used for road design. Examples included:
 - Smalls Road Public School (in the Ryde LGA) - which has opened this year for a limited age range, but with an ultimate capacity of 1,000 students. The interviewee raised that the council has failed to be able to provide pedestrian crossing facilities to coincide with school opening, or in advance of the school opening to the whole cohort due to not meeting the warrants.
 - Gledswood Hills Public School (Camden LGA - opened Feb 2020) - a school built to relieve Oran Park Public School (also recently upgraded) — the council sought traffic committee approval to build a children's crossing, but were rejected on the basis that the demand wasn't yet there, so the crossing couldn't be built until the School was open.
 - Jordan Springs Public School (Penrith LGA) — due to open on day 1 of Term 3, 2020. Council faced issues trying to provide adequate crossing facilities to serve the school, but as at the time of writing, they have now managed to resolve these.
 - Parramatta Council raised the case of a new greenfield development underway in Melrose Park with 20-30 storey towers, including residences. As part of the road design process the council tried unsuccessfully to have pedestrian facilities implemented to connect the towers to the bus stop facilities being provided. As a result of failing to demonstrate how the warrant criteria could be met in full, a seven-stage road crossing will be required to access public transport.
 - Penrith Council raised the example of the dual-lane roundabout at the intersection in front of the council building, which they sought to signalise, but could not meet the warrants based on existing pedestrian volumes.
 - A multi-storey residential development is being constructed on the opposite side of the road to the council building and the council tried to make it a condition of consent for the developer to pay for the intersection upgrade to a signalised crossing
 - Council's analysis of the future attractors that the residents of the new building will be looking to use (including a Westfield and other civic facilities) are all on the opposite side of the road corridor to the new development
 - TfNSW (RMS) didn't support the council's position, so they were forced to remove the condition and lost the associated funding commitment (circa \$5m was the number quoted)
 - The alternative is now there will be 'hundreds of metres of pedestrian fencing to corral footpath users to the next crossing'

- The outcome is town centres with severance issues and unprotected 2-stage crossings, which the council is trying to avoid. The approach to developing the new Jordan Springs suburb is trying to address these issues
- The effect of the warrants process is that pedestrians have to justify their need to cross a road corridor safely prior to adequate infrastructure being in place

The purpose of traffic lights is to manage conflicting demands for movement at traffic intersections. Conflicts can come from both within the road corridor (e.g. turning movements vs through movements) and outside the road corridor (e.g. pedestrian and cyclist movements from footpaths, shared paths and dedicated, off road cycle facilities). All of the different permutations for allowable movements are captured within the SCATS system, with associated timings for each different user group (e.g. green, amber and red time for motor vehicles and dedicated cycle lanterns, green, flashing red and red time at the majority of pedestrian signals).

The length of time allocated to walkers and cyclists appears limited when compared to other road users as a result of the amount of green time pedestrians receive within a timing cycle.

Operational governance processes

As discussed in step 11 of the model description in section 2, the primary operational governance forum for roads where local councils are the road authority is the Traffic Committee.

The Traffic Committee mechanism is formally required under the 'Delegation to Councils - Regulation of Traffic'⁶⁶, which describes the Limitations of the delegation in Schedule 4.

As a result of this requirement, local councils are required to consult the Local Traffic Committee on a range of matters prior to being able to enact their delegation as a roads authority. A range of issues were identified through the review about the ongoing effectiveness and adequacy of this process — especially with regard to providing support for walking and cycling initiatives. Concerns raised included:

- The lack of a requirement that LTCs consider and align decision-making to facilitate the achievement of State and Local strategic plans
- The relevance of requiring political representation (elected council representative and State representative) on a technical review committee tasked with "considering the technical merits of proposals and ensuring that proposals meet current technical guidelines"⁶⁷.
 - A number of interviewees raised issues around walking and cycling proposals submitted to LTCs that impacted on parking provision, a heavily politicised issue.
- The level of control exercised by the State government (TfNSW representatives) over councils managing local roads for which they are responsible for funding, managing and maintaining.

⁶⁶ Source: <https://www.rms.nsw.gov.au/trafficinformation/downloads/trafficdelegation2011.pdf>

⁶⁷ Source: Section 5.1, p6, A guide to the delegation to councils for the regulation of traffic — https://www.rms.nsw.gov.au/business-industry/partners-suppliers/documents/technical-manuals/lcguidev13_i.pdf

- A number of interviewees across different agencies expressed a view around the current process being inefficient in the amount and nature of LTC approvals required
- Many interviewees questioned why the LTC mechanism is still required in NSW when other jurisdictions have moved away from this approach⁶⁸:
 - SA has no equivalent
 - ACT has no equivalent
 - QLD has voluntary traffic and transport groups in some councils which may include police
 - VIC has local traffic committees in the 1930s/40s — currently minor works (parking signs, meters) fully delegated to councils. Major works (traffic signals, speed restrictions, stop/give way signs, and turn bans) approved by VicRoads/DoT
 - WA had something similar until the 1980s
- The role of individual perspectives in the approvals process (any council proposal that fails to receive unanimous support from the LTC must provide TfNSW and the Police with two weeks to respond before acting).
 - Interviewees across different agencies raised concerns that there is a 'vehicles-first' culture, and perceived bias, among many of the TfNSW and Police representatives, which places additional hurdles in the way of walking and cycling proposals
 - Concerns were expressed that the representation and decision-making by LTCs wasn't reflective of broader community attitudes being raised with councils seeking slower speeds and increasing pedestrian and cyclist safety on local roads
 - Examples were given where professional judgement had been applied by TfNSW and Police representatives that resulted in positive outcomes for walkers and cyclists, while examples were also given of representatives applying a rigid application of guidance that resulted in adverse outcomes

Issues summary

The following table summarises the issues raised in the previous section by systemic theme. Issues have been further classified as to whether they are Governance, Financial, Rules and Process or Culture and Organisation related:

- Governance: Issues relating to the overarching influence of the politicians and political decision-making that governs how the system operates, from local government through State and Commonwealth
- Financial: Issues relating to the budgeting and funding of new infrastructure and maintenance and replacement
- Rules and process: Issues relating to legislation, policy and processes that determine the way in which the system operates

⁶⁸ Source: Local Traffic Committees: issues and opportunities presentation, TfNSW, November 2019

- Culture and organisation: Issues relating to human resource related matters within agencies participating in the system

As the following table demonstrates, many of the issues present challenges across multiple dimensions.



Systemic theme	#	Issue	Issue dimensions				Evidence
			Governance	Financial	Rules & process	Culture & Organisation	
1: Primary beneficiaries not the asset owner	1	Footpath funding	●	●	●		- The State only indirectly funds footpaths through the 'Active Transport' program, yet is a major beneficiary in multiple areas - The legislative environment places all the responsibilities on local councils, including footpaths adjacent to State Roads
	2	Council resourcing	●		●	●	- Few councils have dedicated walking and cycling resources, reflective of the cultural and structural importance - Some councils admitted that perceptions of political bias in funding decisions either led to not applying for funding, or making multiple funding applications split apart by electorate
2: Limitations on system throughput	3	Infrastructure backlog		●	●		Many of the infrastructure gaps that exist today can be, to varying degrees, attributed to legacy long-term planning guidance that has allowed suburbs to be built without adequate walking and cycling infrastructure
	4	Organisation and Governance	●		●	●	- Evidence that shared path infrastructure deters vulnerable user groups from walking, but that councils implement such assets as a one-size-fits-all 'active transport' solution due to capacity (lack of skilled walking and cycling resources to identify user needs) and funding (responding to what the State will fund) constraints. - Walking infrastructure is public space. It has to provide multiple uses, supporting utility connections, traffic signs, driveway / building access, bus shelters, cycle parking. The multiple purposes mean many stakeholders are involved; this shared ownership and lack of a single 'owning' agency makes governance difficult.
	5	System-wide funding		●			- Annual value of infrastructure delivered for walking and cycling combined is in the millions of dollars - Annual value of infrastructure delivered for other modes is in the billions of dollars.
	6	Grant process management		●	●		- Only successful funding applicants to the Active Transport (Walking and Cycling) Program are formally notified of outcomes - Councils identified impacts including budgeting issues for projects with proposed shared funding arrangements, and delivery delays as a result of procurement, design and community consultation requirements all needing to be met post-funding decision
	7	Self sustainability unattainable	●	●	●		Councils are the owners of walking and cycling assets adjacent to road corridors, yet have insufficient resources to deliver on the State's Future Transport Vision for walking and cycling

Systemic theme	#	Issue	Issue dimensions				Evidence
			Governance	Financial	Rules & process	Culture & Organisation	
							Council rates are subject to maximum increases determined by IPART, which cover a range of services, including footpath maintenance
	8	Modal hierarchy			●	●	Walking and cycling are not considered as core scope for all transport projects; examples were provided of projects where walking and cycling infrastructure was de-scoped from transport projects as a result of value management
	9	Increasing O&M burden		●			- Councils are the owners of walking and cycling paths - The amount of infrastructure under management by Councils is increasing with growth in number of new developments - In the 2017/18 financial year alone, the total Council maintenance backlog across NSW grew by \$80 million
	10	Secondary impacts	●	●		●	- Demand for dedicated exercise and recreation facilities increases where there is limited access to safe alternatives - The COVID pandemic has demonstrated how many people use publicly accessible walking and cycling infrastructure when alternative facilities are unavailable
3: Alignment of legislation, policies, guidelines and processes	11	Social equity impacts	●		●	●	- The level of focus on providing walking and cycling infrastructure varies greatly across councils - Walking and cycling for recreation are important in regional and rural areas where there are lower levels of public transport service provision - Walking and cycling to access local centres and transport facilities are more important in suburban and urban areas
	12	Warrants process	●		●	●	- Demonstrating that a proposed pedestrian facility is warranted requires evidence that existing pedestrian and motor vehicle demand meets minimum levels across two (reduced warrants) or three periods in a day, preventing adequate infrastructure from being established ahead of developments opening that will increase walking levels - Measuring foot traffic is a labour intensive exercise whereas low-cost methods exist to measure vehicle volumes
	13	Council decision rights	●		●		- Road authority delegations limit the decision-making powers of local councils - Achievement of council walking and cycling outcomes is heavily dependent on the personalities in decision making roles - Guidance documents attempt to codify technical considerations with limited success
	14	Signal timings for			●	●	Technical guidance for modelling traffic signals in microsimulation modelling (replicating SCATS) recommends 'minimum green time of 6 seconds for

Systemic theme	#	Issue	Issue dimensions					Evidence
			Governance	Financial	Rules & process	Culture & Organisation		
		walkers and cyclists					pedestrians' in a nominal cycle time of 140 seconds (unless RMS requests otherwise), resulting in minimum green time allocation to walkers as a default position. • More clarity around the governance of signal timing may also be beneficial.	
	15	Planning legislation	●			●	• Councils determine at a local level the amount and types of walking and cycling infrastructure that they support, with no NSW-wide requirements for minimum provisions in different settings • Many neighbourhoods built during the 1960s, 1970s and 1980s had limited dedicated walking infrastructure due to the relatively low levels of car conflicts • Residential subdivisions and changes in land use densities in urban suburbs have resulted in car growth to the point where roads are not suitable any longer as shared spaces	
	16	The system reflects the prevailing culture	●			●	• The State government doesn't directly fund footpath assets (other than to improve safety) • The focus for Transport (RMS) has been on limiting road-based congestion • The establishment of TfNSW led to a net decrease in walking and cycling focused resources at the State level as "duplicate functions" were removed from the transport cluster	
	17	Strategic and tactical alignment			●	●	• Transport (legacy RMS) Technical Direction documentation is not currently aligned to the Movement and Place (M&P) approach — the strategic approach to transport and land use planning adopted in NSW • Austroads Road Design guidelines and NSW-specific supplements are not currently aligned to the M&P approach	
	18	Rules and (dis)incentives			●	●	• Feedback from council traffic engineers indicates that their decision-making is heavily influenced by the guidelines and standards • Feedback from Austroads about legal guidance received relating to the status of Guideline documentation as being representative of best practice	
	19	Outcome bias impacts			●	●	• The existing warrants process is resulting in perverse outcomes, with pedestrians having to be prepared to cross roads in potentially unsafe locations to warrant the right to safe crossing facilities • Community feedback received by councils suggests that local communities want more pedestrian friendly environments	

Chapter 5: Recommendations

This chapter presents a range of recommendations. In considering proposed interventions, the likely systemic impact has been assessed and considered.

The chapter begins with consideration of what the state might do to address the issues, before progressing to consider each potential intervention individually.

What can the State do?

There are a range of interventions that the State might undertake to address the systemic issues identified through this review. The following table provides a summary of potential interventions that have been identified, mapped to the issues outlined above. The table also includes the expected impact of addressing the issue.

#	Issue	What can the State do?	Systemic impact
1	Footpath funding	Develop an approach to fund footpath infrastructure directly	- Dedicated funding support for footpath assets will encourage councils to address missing links that have high benefits, but are potentially high cost that otherwise wouldn't get constructed - More funding in the system will increase system throughput and generate benefits to the State at a faster rate
2	Council resourcing	- Provide formal feedback to councils about unsuccessful funding outcomes - Increase funding for walking and cycling infrastructure through reprioritisation/reallocation of funding from other modes if necessary	- If councils understand why they aren't receiving funding then it will impact the future funding application rate, the demand on council resources to prepare applications and the discrepancy between forecast funding success and actual success, improving budget forecasting - More funding within the system for walking and cycling infrastructure will also attract greater focus of resources from council
3	Infrastructure backlog	Increase funding for walking and cycling infrastructure through reprioritisation/reallocation of funding from other modes if necessary	- More funding in the system will increase system throughput and generate benefits to the State at a faster rate - Active transport projects have higher BCRs relative to many other modes, but the small value in relative terms doesn't bring meaningful attention to the benefits available

#	Issue	What can the State do?	Systemic impact
4	Organisation and Governance	- Identify opportunities to improve cross-agency governance to champion walking and cycling - Treat walking and cycling as separate modes with senior advocates for each mode in the organisation - Invert the traditional user hierarchy	Treating and reporting walking and cycling as separate modes allows encourages the individual needs of each distinct group to be considered in design and network decisions
5	System-wide funding	- Increase funding for walking and cycling infrastructure through reprioritisation/reallocation of funding from other modes if necessary - Provide funding support for asset maintenance - Develop an approach to fund footpath infrastructure directly	More funding in the system will increase system throughput and generate benefits to the State at a faster rate
6	Grant process management	- Provide formal feedback to councils about unsuccessful funding outcomes - Provide multi-year funding support to councils	- Higher quality funding applications that better meet program goals will deliver improved program outcomes and represent better value for money for State and Federal agencies providing funding - Multi-year funding support will encourage councils to deliver more complete infrastructure (entire projects in one go instead of breaking into smaller projects), improve council budgeting and encourage greater participation levels
7	Self sustainability unattainable	- Increase funding for walking and cycling infrastructure through reprioritisation/reallocation of funding from other modes if necessary - Develop an approach to fund footpath infrastructure directly - Provide funding support for asset maintenance - Provide multi-year funding support to councils	- Higher funding levels will result in more infrastructure available for walking and cycling, which will increase ease of access to public transport facilities (and resultant demand, service utilisation and cost recovery) - Lower demand for other, more expensive modes defers the need for additional capacity - Reducing procurement delays and inefficiencies will result in less administrative overhead, and a higher walking and cycling asset construction rate

#	Issue	What can the State do?	Systemic impact
8	Modal hierarchy	• Invert the traditional user hierarchy • Identify opportunities to improve cross-agency governance to champion walking and cycling • Set outcome-based targets for walking and cycling participation for those responsible for enabling and delivering	• Making adjustments to the user hierarchy will impact the number of Major Projects with walking and cycling scope, increasing the construction rate of new assets and flowing through to improved benefits realisation for major projects and improved alignment of walking and cycling infrastructure with user needs
9	Increasing O&M burden	• Provide funding support for asset maintenance	• Dedicated funding support for walking and cycling asset O&M increases the availability of walking and cycling assets and reduces the size of the O&M backlog encouraging greater levels of walking and cycling
10	Secondary impacts	• Increase funding for walking and cycling infrastructure through reprioritisation/reallocation of funding from other modes if necessary • Provide funding support for asset maintenance	• Increased funding support for walking and cycling infrastructure, and associated asset maintenance activities would be expected to reduce demands for new dedicated facilities
11	Social equity impacts	• Give councils greater ownership of decision-making for local roads — especially with regard to providing pedestrian facilities and speed management measures. • Legislate minimum levels of walking and cycling infrastructure for future development that applies to all council areas	• Improved walking and cycling infrastructure improves safe walking and cycling, improving socially equitable transport options for all and reducing reliance on alternate transport options that incur higher costs. • Benefit to all: virtually all trips have a walking component.
12	Warrants process	• Give councils greater ownership of decision-making for local roads — especially with regard to providing pedestrian facilities and speed management measures • Identify legacy artefacts that embed the 'predict and provide' approach to road corridor planning and develop guidance that facilitates the 'vision and validate' approach • Invert the traditional user hierarchy	• Making changes to the current warrant criteria that facilitate additional crossing facilities will increase the project approval rate which limits the conversion of demand for new facilities into the construction of operational facilities • Additional crossing facilities for walkers and cyclists will improve journey comfort (with respect to feeling safe from other road users) and therefore the alignment of walking and cycling infrastructure with user needs

#	Issue	What can the State do?	Systemic impact
13	Council decision rights	• Give councils greater ownership of decision-making for local roads — especially with regard to providing pedestrian facilities and speed management measures • Identify legacy artefacts that embed the 'predict and provide' approach to road corridor planning and develop guidance that facilitates the 'vision and validate' approach	• Reducing the amount of decisions that are required to go to Local Traffic Committees will increase the Approval rate for new infrastructure, and therefore reduce delays between walking and cycling user needs being identified and resolved
14	Signal timings for walkers and cyclists	• Establish a team to work with local councils to review speed zoning and traffic signal phasing and timings for all road users on a centre by centre basis • Develop metrics that accurately reflect walking and cycling participation	• Addressing this issue will impact on the perceived time benefits of using motor vehicles in areas of high pedestrian and cycling demand, making alternative options more attractive and improving the alignment of walking and cycling routes with user needs in a managed way. More clarity around signal timing governance can also help TfNSW ensure strategic objectives continue to be aligned with the day to day operation of the road network.
15	Planning legislation	• Legislate minimum levels of walking and cycling infrastructure for future development that applies to all council areas • Set outcome-based targets for walking and cycling participation for those responsible for enabling and delivering	• Amending the legislative framework to make walking and cycling infrastructure a key requirement in the design process will improve walking and cycling uptake from residents of new suburbs, whilst also reducing future liabilities arising from the need to construct missing links in a brownfield, constrained environment at higher cost • This initiative addresses council disincentives to require infrastructure on the basis that they will ultimately need to maintain the assets
16	The system reflects the prevailing culture	• Identify opportunities to improve cross-agency governance to champion walking and cycling • Legislate minimum levels of walking and cycling infrastructure for future development that applies to all council areas • Set outcome-based targets for walking and cycling participation for	• Addressing the culture within the system will have a range of systemic impacts, including on the funding priorities of governments at all levels, and the priority given to the delivery of walking and cycling infrastructure as core project scope leading to a higher asset construction rate and the delivery of more infrastructure the meets user needs

#	Issue	What can the State do?	Systemic impact
		those responsible for enabling and delivering. • Increase funding for walking and cycling infrastructure through reprioritisation/reallocation of funding from other modes if necessary	
17	Strategic and tactical alignment	• Identify legacy artefacts that embed the 'predict and provide' approach to road corridor planning and develop guidance that facilitates the 'vision and validate' approach that can be applied by traffic engineers and planners	• Aligning the tactical guidance with the overarching strategy will facilitate cultural change and ensure that practitioners have the appropriate framework within which to deliver movement and place outcomes that are driven by a vision-led process
18	Rules and (dis)incentives	• Identify legacy artefacts that embed the 'predict and provide' approach to road corridor planning and develop guidance that facilitates the 'vision and validate' approach that can be applied by traffic engineers and planners	• Removing perceived roadblocks that exist in the current system will facilitate cultural change enable practitioners to feel empowered to deliver walking and cycling infrastructure in a more context specific way
19	Outcome bias impacts	• Incorporate demand from other corridor users in the traffic signalling system (currently SCATS)	• Removing outcome bias will address issues relating to the perceived benefits of motor vehicles relative to alternate options. In the current road management paradigm, we don't know what we don't know with regard to demands for road corridor capacity from users outside of the road corridor

Interventions

The table above identifies 15 different areas where the State could intervene in the walking and cycling system.

The table below maps the contribution each recommended intervention would make in addressing the 19 identified issues:

#	Interventions	Issue mapping																		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
I	Treat Walking and Cycling as separate modes with senior advocates for each mode in the organisation				•															
II	Give Councils greater ownership of decision-making for local roads - especially with regard to providing pedestrian facilities and speed management measures											•	•	•						
III	Identify all legacy artefacts that embed the 'Predict and Provide' approach to road corridor planning and develop guidance that facilitates the 'Vision and Validate' approach that can be applied by traffic engineers and planners													•	•			•	•	•
IV	Provide formal feedback to councils about unsuccessful funding outcomes		•				•													
V	Develop an approach for the State/TfNSW to fund footpath infrastructure (beyond safety improvements)	•				•		•												
VI	Establish a team to review speed zoning and traffic signal phasing and timings for all road users on a centre by centre basis														•					
VII	Develop metrics that accurately reflect walking and cycling participation														•					•
VII I	Increase funding for walking and cycling infrastructure through reprioritisation/reallocation of funding from other modes if necessary		•	•		•		•			•						•			
IX	Legislate minimum levels of walking and cycling infrastructure for future development that applies to all council areas											•				•	•			
X	Provide funding support for asset maintenance					•		•		•	•									
XI	Provide multi-year funding support to Councils						•	•												
XII	Invert the traditional road user hierarchy				•				•				•							

#	Interventions	Issue mapping																		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
XIII	Incorporate demand from other corridor users in the traffic signalling system (currently SCATS)															•				•
XI V	Set outcome-based targets for walking participation for those responsible for enabling and delivering								•							•	•			
XV	Identify opportunities to improve cross-agency governance to champion walking and cycling				•				•								•			



What might the recommended interventions look like?

There are a range of interventions that the State might undertake to address the systemic issues identified through this review. The following sections provides a summary of the interventions identified in response to the issues.

I: Treat Walking and Cycling as separate modes with senior advocates for each mode in the organisation

The current approach of treating walking and cycling as 'Active Transport' has resulted in unintended consequences. The first step in addressing this is to re-establish walking and cycling as dedicated modes, with senior advocates for each mode within TfNSW and establishing walking and cycling outcomes for senior leaders in the organisation. Walking is currently 'the forgotten mode' within a transport context, yet it is a critical element to providing public transport services that meet community needs. The needs and considerations of walkers and cyclists are often at odds (especially in a commuter context), yet in recent times a significant proportion of transport-funded projects have delivered shared path infrastructure.

There is an opportunity, as TfNSW undertakes the Evolving Transport organisational integration and restructuring activities associated with integrating the legacy RMS, to consider how best to deliver walking and cycling outcomes as a core part of the organisation's daily business. The benefits of investing in systems and programs to reduce private vehicle and public transport journey times by a few minutes can very quickly be undone if the first and last component of the journey — on foot, or by bike — is met with unnecessary delays.

II: Give Councils greater ownership of decision-making for local roads - especially with regard to providing pedestrian facilities and speed management measures

The second recommendation is to provide councils with greater ownership of decision-making for local roads. The current Local Traffic Committee process is very tactical in nature, and often acts as an impediment to the delivery of walking and cycling outcomes, especially where councils seek to create more walking and cycling-friendly environments.

It is recognised that as part of the COVID measures put in place by TfNSW, there has been a temporary change to delegations that affect what needs to be taken to the LTC. The outcomes of this initiative should be assessed to see lessons were learned, and seek to embed positive elements on a more permanent basis.

Other jurisdictions in Australia have moved away from the LTC approach. It is understood that there are arguments for and against retaining the Traffic Committee process, however, the vast majority of stakeholders engaged during this review have suggested that there should be a serious reconsideration of the types of decisions that need LTC input.

Implementation of the Movement and Place framework within the transport cluster provides an opportunity to take a more strategic approach to the road management relationship between TfNSW and local councils. For example, a policy-led approach could be taken that allows councils to lower speed limits on Local Roads under their control, but not increase them, limiting the potential for unintended consequences.

Likewise, if councils worked together with TfNSW (as per recommendation VI) to agree a strategic approach at a centre-by-centre of where the current and future movement corridors are for different users, then they could potentially work towards delivering on the vision without the need to return to LTC for every tactical intervention.

There are a range of potential models that might be implemented as alternatives to the current approach. Whilst the current structure meets the legislative need for councils to seek RMS and Police approvals, it does so in a one-size-fits-all approach with little nuance for the range of strategic and tactical initiatives requiring consideration.

III: Identify all legacy artefacts that embed the 'Predict and Provide' approach to road corridor planning and develop guidance that facilitates the 'Vision and Validate' approach that can be applied by traffic engineers and planners

This review has identified a range of tactical documents that influence and constrain the design and operational decisions of planners, designers and engineers. To facilitate the effective implementation of the Movement and Place approach to transportation and corridor planning in NSW there is a need to ensure that all legacy documentation that directs and requires practitioners to apply a different planning paradigm is identified and addressed.

The third recommendation is that TfNSW in the first instance, undertake a review of the road planning guidance to identify legacy artefacts that need to be addressed. Depending upon the source of the conflicting guidance/requirements, TfNSW has a range of options at its disposal, including:

- If a TfNSW-issued document, updating, reissuing and providing implementation support in applying the refined approach
- If issued in another jurisdiction, but adopted in NSW, issuing a NSW Supplement that embeds the approach to be taken

IV: Provide formal feedback to councils about unsuccessful funding outcomes

This recommendation primarily relates to the current Active Transport (Walking and Cycling) Program, however may apply more broadly. The premise is that if councils better understand why they are not eligible for grant funding, then they can better determine in the future whether to allocate scarce resources to undertaking the application process in future funding rounds. As a result, the quality of program applications would be expected to improve over time.

In relation to the Active Transport Program, it is understood that many of the processes supporting the administration of the program are largely manual, which has created a number of issues in the past. It is also understood that a number of Infrastructure NSW recommendations were made in relation to the program administration which are yet to be fully implemented, which includes this recommendation.

V: Develop an approach to for the State/TfNSW fund footpath infrastructure (beyond safety improvements)

The NSW government funds pedestrian and cyclists safety upgrades through the Liveable and Safe Urban Communities Initiative as part of the Towards Zero Program⁶⁹. This includes treatments such as:

- Expanding 40 km/h zones in areas of high pedestrian activity
- Installing traffic calming, pedestrian refuges and crossings in busy urban places to improve pedestrian safety
- Work that delivers safer and more controlled vehicle turning to reduce the risk of dangerous side impact crashes
- An expanded pedestrian protection ('green on green' removal) program and signal changes for safer pedestrian movement
- Raised intersection platforms, profile treatments, and innovative roundabout designs at more urban intersections to reduce serious injuries.

However, state funding does not typically include provision of footpaths and other fundamental (non-safety) infrastructure. A strong view from stakeholders is that the legacy approach taken by the State of not explicitly funding footpaths has resulted in an inconsistent attitude towards walking and cycling at the local government level.

One of the most meaningful interventions that the State could take to increase levels of walking and cycling would be to provide direct funding support to councils for footpaths.

There are a range of ways in which this could be facilitated, including:

- direct funding from the government via a grant program for missing links,
- taking ownership of road related areas in the same way that the government has for the State Road network,
- enabling Local Government to increase rates income through amendment of rate pegging arrangements to increase funding for walking and cycling strategies and plans

VI: Setup a cross-functional team to identify and deliver tactical and operational improvements, such as speed zoning and traffic signal phasing and timings, using movement and place principles.

The Movement and Place Framework has recently been developed by the NSW Government⁷⁰ and is currently being refined. It will fundamentally change how transport planning is conducted. Centre plans using the movement and place framework are

⁶⁹ <https://towardszero.nsw.gov.au/liveable-and-safe-urban-communities>

⁷⁰ NSW Government, *Practitioner's Guide to Movement and Place, Version 0.1*, March 2020. See: <https://www.governmentarchitect.nsw.gov.au/resources/ga/media/files/ga/manuals-and-guides/practitioners-guide-to-movement-and-place-2020-06-04.pdf?la=en>

currently being developed for some centres, and others are expected to be delivered over the next few years.

While this is underway, a relatively quick and low-cost means of improving 'place' and walkability in our centres could be to review and improve some of the operational, or non-infrastructure aspects of how our centres operate. Areas to review would include:

- Speed limits, to identify opportunities to reduce speed in areas of high risk and / or with high 'place' characteristics on local streets and civic spaces.
- Traffic signal phasing to ensure they meet the needs of all road users. In particular, to ensure that in areas of high pedestrian activity that signal timings are appropriate.
- Other 'quick win' or tactical improvements that could include revisions to kerbside restrictions, bus stop locations, improvements to key modal interchange locations.

This would require a cross-functional team from different disciplines, including both state and local government, working collaboratively. This team could also contribute to the place and precinct plans that are currently being developed for a number of centres.

The cross-functional team would work with local councils on a centre-by-centre, working to a set of clear principles founded on the Movement and Place approach. The team should consider building on the speed zone review team that is in place in the Centre for Road Safety.

Members of the team should be appropriately familiar and comfortable in taking a Movement and Place approach to the reviews, and should include as a minimum:

- Movement and Place practitioners
- Centre for Road Safety representatives to provide guidance on applying updated speed zoning guidelines
- Network and Safety Services representatives with experience in designing and delivering walking and cycling infrastructure
- Network Operations representatives with expertise in SCATS
- Walking and Cycling experts with knowledge of future strategies and plans
- Bus planners

VII: Develop metrics that accurately reflect walking and cycling participation

At the moment the quality of information gathered about walking and cycling participation levels is extremely limited — especially in comparison with other modes. Current survey mechanisms such as the Household Travel Survey provide useful information at a State activity level, however, provide limited utility and insight when attempting to derive localised insights. Many councils undertake walking and cycling census exercises to capture data, however, current approaches are relatively resource intensive in comparison to the automated counting available in defined corridors such as roads and rail.

Metrics such as walking Level of Service (and others) could be available to better analyse and understand walking patterns and trends.

As a standard measure, the inclusion of counter technology is recommended in all new cycleway facilities

VIII: Increase funding for walking and cycling infrastructure through reprioritisation/reallocation of funding from other modes if necessary

As detailed earlier in the document, overall system throughput is limited by the amount of funds available for walking and cycling infrastructure. Local Councils are constrained in their ability to raise revenue, with no councils financially self-sufficient.

Ultimately, as the main beneficiary from people walking and cycling, it is recommended that the State should investigate options for providing greater funding support for new infrastructure. As noted in previous sections, currently just 0.2% of Major Projects spend is allocated to Walking and Cycling for dedicated interventions.

Annual Transport cluster spend totals \$29.5b (\$14.4b recurrent expenditure, \$15.1 capital expenditure). While the difficulties and challenges of funding are recognised and understood, there are choices that can be taken in how constrained funding is invested. Additional investment should be possible within existing funding constraints through the reprioritisation and/or re-allocation of funding. The State is investing \$256m over four years in walking and cycling infrastructure projects. By comparison, the State has provided \$385m over three years from 1 July 2019 to expand the toll relief program for motorists to assist with the cost of living, while extending free registration when drivers spend \$25 a week or more on tolls and 50% off motor vehicle registration for one vehicle for drivers spending above \$15 a week⁷¹.

IX: Legislate minimum levels of walking and cycling infrastructure for future development that applies to all council areas

A detailed analysis of the planning system is beyond the scope of this report, however, through this review a number of interactions between the planning system and walking and cycling outcomes have been identified. It is also important to note that it is recognised that this is a nuanced area, as there are different challenges and considerations facing urban, suburban, regional and rural communities in relation to the nature and scope of challenges in relation to walking and cycling.

The planning system provides a range of instruments that influence walking and cycling, including the types, and amounts of developer contributions. A range of potential options exist in the planning space, including, but not limited to:

- limiting future infrastructure deficits is to look at defining minimum levels of walking and cycling infrastructure for future greenfield and brownfield developments.
- assessing opportunities to capture financial contributions from compliant developments towards delivering local council infrastructure plans.
- assessing the potential for a local infrastructure SEPP provision to ensure consideration and delivery of strategic walking and cycling networks, such as the Principal Bicycle Network (PBN)

It is recommended that DPIE undertake a review of development controls and development contributions to identify interventions that can increase walking and cycling uptake. It is recommended that consideration be given to how the planning system might better support the creation of communities and local places where walking and cycling are the preferred modes for school access and local trips, facilitated by inclusive design

⁷¹ Source: https://www.budget.nsw.gov.au/sites/default/files/budget-2019-06/Budget_Paper_3-Budget_Estimates-Budget_201920.pdf, p. 7 — 2

considerations, low speed environments by design and a pedestrian-first approach to road crossings.

X: Provide funding support for asset maintenance

The issue of asset maintenance has highlighted how the current system creates unintended consequences as a result of its structure and incentives. Local councils understand that their asset maintenance position is deteriorating over time as the size of the asset base under management increases over time. There currently exists a strong disincentive on behalf of councils to create new walking and cycling assets, and maintain those assets to an equivalent standard to other asset classes.

It is recommended that the State undertake a review to clarify the true position in relation to walking and cycling assets, and alternative options for addressing the asset maintenance funding challenge. A number of stakeholders should be engaged in options identification, including:

- Treasury
- Office of Local Government
- IPART
- DPIE
- GSC
- Department of Regional NSW

XI: Provide multi-year funding support to Councils

One area in which TfNSW could make a meaningful impact in terms of increasing the rate of construction for new walking and cycling assets lies in changing the approach taken to funding projects through the Active Transport (Walking and Cycling) Program. Returning to a multi-year funding approach would provide grant recipients with the ability to procure more substantial works in a single contract, reducing procurement delays which currently occur on an annual basis.

Through providing a mechanism to support multi-year funding agreements, the Active Transport Program would be able to fund construction works in a single arrangement for facilities that are currently decomposed into multiple projects.

Again, there are alternative models that could be explored in this space, from providing councils with funds for multiple projects that can be combined into a delivery program to access economies of scale and scope, to single projects with a larger scope that will take multiple years to construct.

XII: Invert the traditional road user hierarchy

Traditionally the road user hierarchy has put general traffic (typically private vehicles and freight) at the top, with other modes appearing lower in the hierarchy. Active transport

users have typically not been the focus of many transport projects. As noted elsewhere in this report, road project budgets tend to be allocated to deliver benefit for general traffic, with active transport budget items either not specified or frequently de-scoped under budget pressure.

The adoption and application of the Movement and Place framework is expected to significantly change the way in which walking and cycling are considered, putting pedestrians at the top of the hierarchy, followed by cyclists. This recognises the ability of walking and cycling to provide transport function without compromising place.

While the concept that 'inclusive design is good design' is now widely accepted in the transport community, many stakeholders believe that this needs to be consistently demonstrated 'on the ground'. Many transport projects are developed as mode-specific solutions (or mode-led) that implicitly prioritise the developing mode in trade-off decisions between different user groups. There is a view that active transport users are still being de-prioritised as they are not seen as the target customer.

As this review has identified, all public transport users are walkers (and sometimes cyclists) on at least one leg of their journey — yet providing pedestrian crossing facilities across busy movement corridors (often with dedicated bus lanes) is seen as problematic by many traffic engineers due to the delays caused to through movements. Delays caused to walkers and cyclists often form a significantly larger proportion of walking and cycling journey times than for other modes, in part as a result of the approach taken to signalised cycle times and the provision of crossing facilities. Inverting the traditional vehicle-first user hierarchy applied by road designers and traffic engineers – and consistently demonstrating this across multiple projects – therefore has the potential to benefit walking and cycling greatly.

XIII: Incorporate demand from other corridor users in the traffic signalling system (currently SCATS)

It is recommended that the future technology roadmap for the traffic signalling system provide a mechanism for balancing demands from a broader range of road corridor users. A range of technological advances have provided potential approaches for measuring demand from walkers and cyclists, beyond the traditional button-triggered call-up.

The implementation of the Movement and Place-based considerations in a road corridor has the potential to re-balance which user groups are relatively more important in providing road priority at signals. Combined with the introduction of 'smart' traffic light technologies into the NSW traffic network as the next generation of SCATS (or equivalent) is rolled out, presents a significant opportunity to consider transport corridor capacity challenges in a more holistic sense.

XIV: Set outcome-based targets for walking participation for those responsible for enabling and delivering

There is a well known maxim, often mistakenly attributed to the management guru Peter Drucker, that “what gets measured gets managed”⁷². In conducting this review, the

⁷² Note: <https://www.drucker.institute/thedx/measurement-myopia/>

challenge of being able to provide objective evidence about the demand for walking and cycling has been raised by a number of stakeholders as creating issues when trying to advocate for improved facilities. This is, in part, because the process of quantifying road demand is relatively simple, and in many cases is automated. There is a significant, and growing body of evidence that widening roads to increase capacity results in worsening congestion in the long run as a result of induced demand⁷³, yet because the need can be quantified, significant investment continues to flow into increasing road capacity in constrained corridors.

Recognising the challenges that this presents, there is still an argument that, as the saying goes “where focus goes, energy flows”⁷⁴. Given the overarching management paradigm of managing to targets and KPIs, it is therefore recommended that a measure be developed that focuses an increased amount of management energy on delivering walking and cycling outcomes. These targets would be aligned with key strategies, such as Future Transport 2056.

There are a range of options for establishing goals and KPIs. Given the cross-organisational nature of the agencies within the NSW government that benefit from greater levels of walking and cycling (Health, Transport, Planning & Environment, Sport & Recreation), and the cross-organisational responsibilities in defining the systemic structure and rules that govern system behaviour (DPIE, Transport, Treasury), it is recommended that measures are developed that agency heads are jointly responsible for working to deliver. One mechanism which has been suggested in this regard is the creation of new Premier’s Priorities for walking and cycling.

XV: Identify opportunities to improve cross-agency governance to champion walking and cycling

In support of the above recommendation, and the implementation of broader changes to the active transport system, it is recommended that the State identify opportunities to improve cross-agency governance to champion walking and cycling.

Achieving cultural change is no easy task, and the first task is to accept that there is an issue that needs to be addressed, with senior leaders advocating and driving change. This review has identified a number of issues that are inhibiting the achievement of walking and cycling outcomes, with a range impacts that are potentially life-changing in the NSW community. Creating long-term change in this space will require agencies at all levels of government to agree that these are problems worth solving, yet that should not stop the State government from taking the lead.

As discussed above, meaningful change will require cross-agency interventions, including:

- understanding how the planning system can ensure that new developments are delivered without missing infrastructure from day 1
- behavioural change campaigns that encourage greater levels of uptake — especially among the young so that healthy attitudes and reinforcing behaviours are embedded from an early age
- ensuring schoolchildren have safe walking and cycling facilities to their local schools, which schools encourage kids to use instead of placing barriers to uptake

⁷³ See, for example, The Fundamental Law of Road Congestion: Evidence from US cities — Source: <https://www.nber.org/papers/w15376>

⁷⁴ Saying attributed to Tony Robbins, <https://www.tonyrobbins.com/career-business/where-focus-goes-energy-flows/>

- ensuring walking and cycling infrastructure is delivered that is inclusive and attractive for all in society, and not only those fortunate enough to be fully mobile.

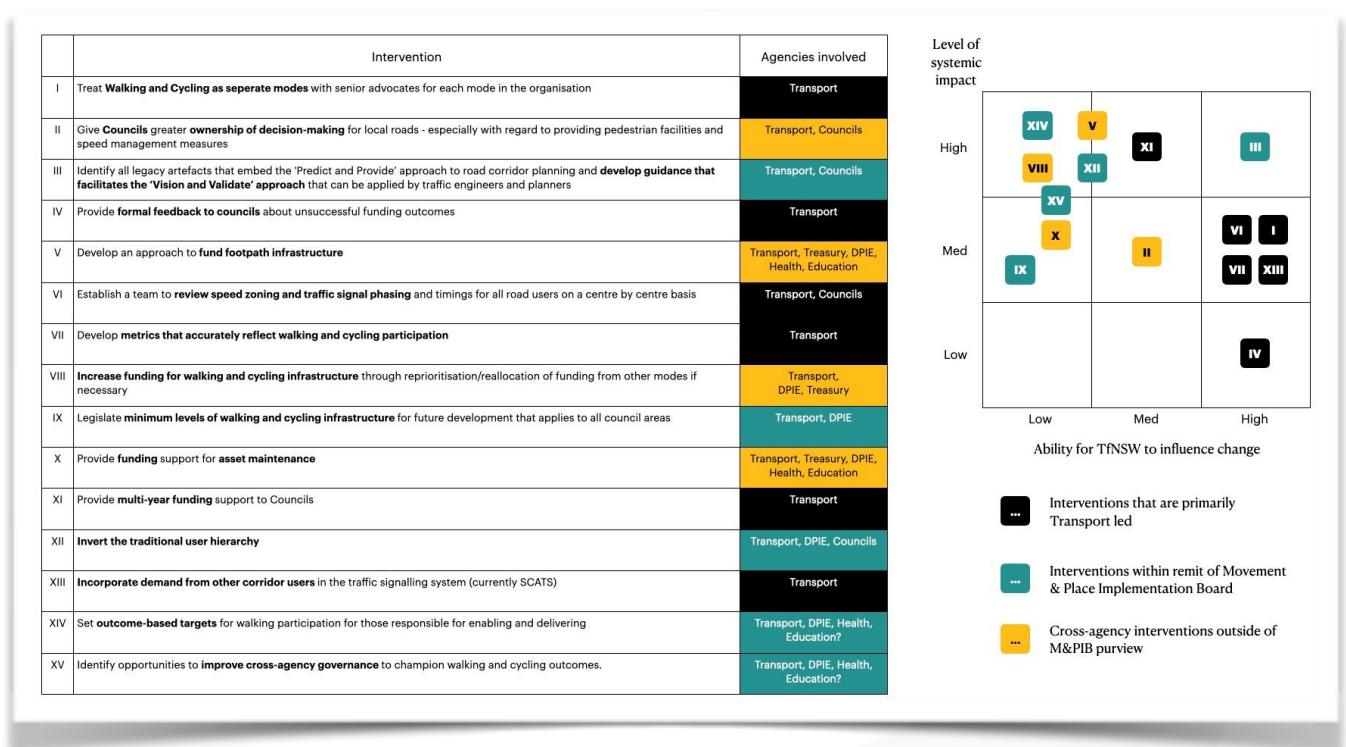


Chapter 6: Next steps

This chapter looks at proposed implementation governance responsibilities for the recommendations outlined in the previous chapter. Three categories of intervention are defined, those which are within the domain of TfNSW to drive implementation, those which fall within the purview of the Movement and Place Implementation Board, chaired by DPIE, and other, cross-agency interventions.

Interventions

The following figure shows the proposed implementation governance arrangements for the interventions:



The following sections provide further details.

TfNSW-focused

For interventions that are primarily TfNSW led, it has been proposed that the TfNSW Planning & Programs Workstream Steering Committee take the governance lead in overseeing implementation activities.

Cross-agency, Movement & Place related

For interventions that are related to the Movement & Place framework, it has been proposed that the DPIE-chaired Movement & Place Implementation Board take the governance lead in overseeing implementation activities.

Other cross-agency

For other cross-agency interventions that are outside of the M&PIB purview, it is proposed that the Walking and Placemaking SBC team identify the most appropriate governance forum.

Walking and Placemaking SBC

As mentioned in the introduction, this report also forms an appendix to the Walking and Placemaking SBC. It is anticipated that implementation of some of the recommendations will be managed through the SBC process to identify and release funding.



Appendix 1: Consultation

Input was received from the following people as part of this review

Name	Role	Organisation
Rachel Agyare	Senior Coordinator Strategic Planning	Blacktown City Council
Tom Allen	Team Leader Traffic and Road Safety	Camden Council
Andrew Aspden	Manager Transport Planning	City of Sydney Council
David Ballm	Associate Director Planning (CBD), Greater Sydney	TfNSW
John Begley	Senior Coordinator — Transport Services	City of Ryde Council
Amit Bhattarai	Concept of Operations Project, Greater Sydney	TfNSW
Janet Bingham	Manager Strategic Planning	Bathurst City Council
David Bobbermen	Safety Program Manager	Austroads
Bernard Carlon	Executive Director, Centre for Road Safety	TfNSW
Michelle Carter	Strategic Transport Coordinator	Northern Beaches Council
Ben Cebuliak	A/Manager Movement & Place, Customer Strategy and Technology (CST)	TfNSW
Mark Crispin	Senior Transport Planner, City Strategy	City of Parramatta Council
Jerel David	Associate Director, Strategic Policy & Projects	NSW Treasury
Koosha Deghan	A/Manager, Walking and Cycling Program, CST	TfNSW
Monica Desanti	A/Senior Planning Officer	Greater Sydney Commission
James Dobinson	Active Transport Lead, Greater Sydney	TfNSW
David Drodz	Traffic Engineering Coordinator	Penrith Council
Melvin Eveleigh	Director Safe Systems, Centre for Road Safety	TfNSW
Jessica Farrell	Manager Movement and Place, CST	TfNSW
Louise Fisher	Chief External Funding Coordinator, Innovation and Futures	Central Coast Council
Vanessa Gordon	Director Place Team, Public Spaces Division	NSW Department of Planning, Industry and Environment
Robin Grant	Centre for Road Safety	TfNSW
John Hanlon	Senior Transport Engineer	Port Macquarie-Hastings Council
Rema Hayek	Senior Policy Officer, Active Living Policy Team	NSW Ministry of Health
Contessa Hajinikitas	Walking and Cycling Strategy	TfNSW
Lyndall Johnson	Research and Operational Policy Analysis, Greater Sydney	TfNSW
Brigid Kelly	Senior Transport Planner	Inner West Council
Ingo Koernicke	Senior Environmental Scientist (Air Quality and Sustainable Transport)	Sutherland Shire Council
Marc Lane	Principal Integrated Frameworks	NSW Government Architect

Name	Role	Organisation
Myfanwy Lawrence	Technical Manager, Planning for Places - Metropolitan	TfNSW
Joseph Le	Manager Safer Roads, Centre for Road Safety	TfNSW
Rebecca Lehman	School Infrastructure	NSW Department of Education
Professor David Levinson	President, WalkSydney; Professor of Transport Engineering	WalkSydney / University of Sydney
Yvette Lieschke-Mercer	Road Safety	Parkes Council
Dr Annie Matan	Transport Planner	City of Sydney Council
Peter Mccue	Director Sport Development and Support	NSW Office of Sport
Barry Nicholls	Transport Economist, Walking SBC	TfNSW
Alison Noyes	Centre for Road Safety	TfNSW
Matthew O'Connor	Manager Recreation Planning and Design	Blacktown City Council
Leon Paap	Active Transport Program Manager	TfNSW
Davie Petrie	Manager City Design and Public Domain	Liverpool City Council
Bruce Powe	Senior Traffic Engineer	Sutherland Shire Council
Wendy Read	Road Safety Officer	Penrith Council
Matthew Rogers	Director Future Planning & Readiness	TfNSW
Richard Searle	Traffic and Transport Manager	City of Parramatta Council
David Scott	A/Executive Director Advanced Analytics and Insights, CST	TfNSW
Saniya Sharmeen	Traffic and Transport Team Leader	City of Parramatta Council
Nick Smith	Strategy Engineer, Project Management & Engineering Services	Tamworth Council
Silvija Smits	A/Director, City Planning Strategy (Research and Advisory)	Greater Sydney Commission
Amy Stacey	A/Senior Transport Planner, Regional Strategy, CST	TfNSW
Cheryl Tucker	Operations Analyst	Griffith City Council
Jamie Van Geldermalsen	Urban Planner	Greater Sydney Commission
Will Warner	Centre for Road Safety	TfNSW
Michelle Washington	Principal Partnerships, Place Team	NSW Government Architect
Luke Wilby	Centre for Road Safety	TfNSW
Gareth Wymond	Transport team	NSW Treasury
Howard Zhang	Senior Advisor, Transport	NSW Treasury